

German Air Forces? This notion we found laughable, for ours was the morale that suffered.

Then did we find more fights or shoot down more Huns ...? On the contrary, combats were fewer, for the really intensive fighting was always near the Lines, within reach of the artillery-spotting and other patrolling two-seaters.

Unfortunately High Command held to the illusion that D.O.P.s not only produced bigger and better combats but were an important instrument of offensive policy, which was a meaningless slogan, for an offensive spirit in the air meant attacking the enemy with resolution, not showing the flag over Tournai. The consequence was that fighter pilots built up a deep resentment ... These insubordinate notions did not all come unbidden in the air but later on the ground, when there was time and mood to reflect.<sup>66</sup>

Despite being frequently outnumbered things did not always go so badly for the fighter pilots of the RFC. McKeever in 11 Squadron started his remarkable record of success by claiming his first victim on 26 June. He and his observers – ‘gunners’ might have been a more appropriate term – were credited with their eighth victory only eighteen days later.\* On 21 July Raymond Collishaw and four other Canadians from Naval Ten – Flight Commander J.E. Sharman of Oak Lake, Man., Flight Lieutenant W.M. Alexander of Toronto and Flight Sub-Lieutenants E.V. Reid of Toronto and G.L. Trapp of New Westminster, BC – dived on about twenty enemy scouts over Passchendaele. Collishaw claimed three out of control in the course of a long general combat.<sup>67</sup> This struggle for air superiority imposed a considerable physical strain on the pilots, as ‘Mel’ Alexander recalled in tranquillity many years later. At nineteen years of age he was an experienced pilot in perhaps the most successful of all British air formations, the famed ‘Black Flight’ of Naval Ten.† ‘Butterflies in your stomach is what you call it – nervous tension. You’re almost panicky ...’ he remembered, and after most patrols his jaws ached from the prolonged muscular tension.

On 24 July the staff of V Brigade could confidently report that ‘the number of decisive combats had considerably decreased during the last few days which is a sure sign that the German morale is breaking down,’ but the truth of the matter

\* Before 1917 was out McKeever was awarded the MC and Bar and promoted captain. No 11 Squadron had many other Canadians on its rolls during July and August 1917. They included D.G. Davidson of Westmount, Que. (KIA 23 Aug. 1917), F.J. Foster of Clinton, Ont. (KIA 23 Aug. 1917), H.G. Kent of Toronto, J.A. LeRoyer of Quebec City (WIA 5 July 1917), W.B. MacKay of Ingersoll, Ont. (POW 27 July 1917), P.D. McIntosh of Toronto (WIA 17 July 1917), H.C. McKinney of Shannonville, Ont., T.W. Morse of Toronto (POW 20 Nov. 1917), E.D. Perney of Hamilton (KIA 23 Nov. 1917), J.A. Revill of Edmonton (KIA 11 Nov. 1917), C.E. Robertson of Walkerton, Ont. (KIA 12 July 1917), N.J. Taylor of Regina (POW 19 Sept. 1917), W.H. Walker of Saskatchewan Landing, Sask. (KIA 18 Aug. 1917), and J.L. Williamson of Toronto.

† The commander of this all-Canadian flight, Raymond Collishaw, with twenty-seven victories to his credit by 5 July, added ten more to his score and was shot down himself twice in three days before going on two months well-earned leave in early August. ‘Pilots soon wear out as such,’ recorded General Trenchard on 30 August 1917 when offering GHQ some points concerning the formation of a separate air service. ‘There are not enough ground billets for all worn out pilots. Arrangements should be made for them to be received into the Army or the Navy if they desire such employment.’ Air 1/521/16/12/3

was that the enemy, subject to similar strains, was holding up about equally well. This brief lull in the air battle had more to do with re-deployments in the air arm of the Fourth German Army and the difficulties of finding sufficient airfields on the watery Flanders plain than it had with German morale. In an air battle over Polygon Wood two days later a German force of about fifty fighters engaged almost as many British scouts, while down below four German two-seaters successfully reconnoitred the British line in front of Ypres. That neither side was able to shoot down a single opponent in such a large dogfight suggests that they were very well-matched, rather than that the German morale was breaking down. Throughout this period, too, enemy reconnaissance machines were able to keep a satisfactory watch on the two-and-a-half mile wide main zone of traffic which ran parallel to the front some three miles behind. A single reconnaissance machine, flying at high speed, could cover the whole corridor of the British front in less than an hour. The observed volume and regularity of ground traffic contributed greatly to the enemy's understanding of the British build-up.<sup>68</sup>

On the other hand, the German scouts were even less able to prevent the RFC's reconnaissance and artillery observation aircraft from fulfilling their functions. The weekly intelligence summary of the Fourth German Army recorded on 18 July that 'the number of [enemy] reconnaissance formations has doubled,' although 'these mainly confined themselves to close reconnaissance; the line Courtrai-Tourcoing was reached only once.' Reconnaissance on this scale meant that the Germans could keep few secrets, and it could only have been a slight consolation to them that forty-five British machines were claimed to have been shot down in the week under review, twenty-two of them falling within the German lines. By the end of the month 9 Squadron,\* attached to the Fifth Army's XIV Corps in the tip of the salient, was flying fifteen counter-battery and twenty or more trench shoots a day despite all attempts to stop them.<sup>69</sup>

After several postponements the ground attack was finally scheduled for the morning of 31 July. As had happened earlier at Vimy, however, the most effective air operations had been conducted prior to the ground assault. The weather deteriorated so badly on the 29th that the air war virtually ceased until dawn on the 31st. In late afternoon the weather again closed in and flying had to be postponed. In the interval overcast skies and drizzling rain severely limited air operations. The artillery machines were unable to conduct a single shoot, contact patrolling was ineffective, and neither bombing nor close ground support missions could claim much success. For their marginal efforts the RFC paid dearly; thirty machines were rendered unserviceable (mostly by ground fire) during the day.<sup>70</sup>

It continued to rain intermittently for ninety-six hours while the poor British infantry carried the line forward to a maximum depth of 3000 yards at the cost of some 31,000 casualties. Every small British advance was met by a determined German counter-attack, in which the German *Schlachtstaffeln*, unlike their British

\* Canadians with 9 Squadron during the period of the offensive included J.P. Cunninghame of Red Deer, Alta, F.W. Curtis of Toronto (KIA 14 Aug. 1917), F.B. Doran of Iroquois, Ont. (KIA 14 Aug. 1917), G.D. Gillie of Cornwall, Ont., C. Knowles (WIA 24 July 1917), A.G. Peace, and H.S. Quigley, all of Toronto. G.S.B. Fuller of Sherbrooke, Que, joined the squadron in September 1917.

opponents, used large formations of close support aircraft to aid their ground forces in tactical arrangements which had been carefully worked out and rehearsed beforehand.<sup>71</sup> With only half of the planned territorial gains actually in British hands, Haig temporarily called off the ground attack, explaining to the British government that 'The low-lying, clayey soil, torn by shells and sodden with rain, turned to a succession of vast muddy pools. The valleys of the choked and overflowing streams were speedily transformed into long stretches of bog ... In these conditions operations of any magnitude became impossible, and the resumption of our offensive was necessarily postponed until a period of fine weather should allow the ground to recover.'<sup>72</sup>

The aerial battle could not so easily be stopped and restarted. Airpower's battlefield mobility, born of its speed and ability to manoeuvre in a third dimension, means that it cannot be turned on or off as simply as ground power. Armies can fight hard for days or weeks or months, and then relapse into a semi-comatose state operationally, without losing the ability to hold their ground – indeed, that was the essence of trench warfare on the Western Front. But, as Trenchard clearly saw, airpower is offensive by definition. It must hold at least a local superiority or it holds nothing: superiority cannot be maintained by 'holding ground.' Air forces, like navies, can ensure superiority only by an offensive strategy. It was therefore impossible for the RFC to adopt a static, defensive posture. But even after the rain stopped, on the 5th, the development of the British air offensive was seriously impeded by heavy cloud cover. Artillery co-operation was particularly hampered, being made 'most difficult, if not impracticable.' When the skies did clear a little the corps pilots might have to contend alone with German fighters. On 6 August, for example, an RE8 of 4 Squadron, on artillery observation duties over Zillebeke Lake and piloted by Captain W.H. Gilroy of Mount Forest, Ont., with Lieutenant H.K. Thompson of Erindale, Ont., as observer,\* was attacked by an enemy scout which shot away the rudder controls. Using the ailerons, Gilroy turned and dived at once towards Ypres while his observer held the enemy off with his Lewis gun. They made a successful crash-landing inside the British lines.<sup>73</sup> Neither was hurt but the British artillery on II Corps front was temporarily blinded.

Three days later another RE8, of 16 Squadron, flown by Second Lieutenant J.A. Hutchison of Fordwich, Ont., with Lieutenant A. Willans of Ottawa as his observer, encountered two Albatros scouts.<sup>†</sup> They shot down the first and drove off the second. Few corps squadron aircrews were as successful in combat as those of No 16, supporting the Canadian Corps. It usually had a very high proportion of Canadians and enjoyed a widespread reputation for skill, courage, and tenacity. 'On every flight over the lines we met their ugly two-seaters dodging Archie ...'

\* Other Canadians serving as aircrew in 4 Squadron on 6 August 1917 included A.H. Bailey of Saskatchewan, C.E.B. Corbould of New Westminster, BC, T.F. Flanagan of Waterville, NS (who had just returned to the squadron after being wounded on 12 June 1917), R.G. McMullen of Woodstock, Ont., F.L. Steben of Brockville, Ont. (WIA 16 Sept. 1917), T. Weir of Toronto, and W.H. Weller of St Peter's, NS (WIA 16 Sept. 1917).

† Other Canadians in 16 Squadron at this time included E. Alder, address unknown (WIA 12 May 1917), F.H. Baguley of Toronto, A.E. Hahn of Tavistock, Ont., F.E. Neily of Esquimalt, BC (KIA 27 Dec. 1917), J.J. O'Loughlin of Toronto, E.H. Read of Ottawa (KIA 26 Dec. 1917), and R.J.S. White of Regina.

wrote an admiring British fighter pilot, '... they never "gave-way" to the German fighters unless they were hopelessly outnumbered, but, staying to fight, succeeded occasionally in bringing down enemy fighters.' Perhaps their performance was influenced by a new commanding officer who had joined the squadron in early July. Major C.F.A. Portal would win a Bar to his DSO before he was posted back to England in June 1918. Twenty years later another Englishman who had served with him in 16 Squadron guessed that 'by now [he] must be a big noise in the Royal Air Force; his officers then deeply respected his coolness and gift of leadership.'<sup>74</sup>

After an unsuccessful attempt to storm the Gheluvelt plateau on 10 August, GHQ resolved to renew the offensive. Twenty-four hours before the assault in Flanders was renewed, however, a diversionary attack was launched by the Canadian Corps in the south against a feature known as Hill 70 on the outskirts of Lens. This attack went in on 15 August and, for obvious reasons, little attempt was made to achieve surprise. On 9 August a simultaneous low-level attack by six Nieuport 17s of 40 Squadron, including two flown by Lieutenant H.A. Kennedy of Hamilton, Ont., and Second Lieutenant W.L. Harrison of Toronto,<sup>†</sup> brought down all six enemy observation balloons on that sector of the front. This certainly hampered enemy observation but it also gave a preliminary indication that something unusual was happening. Then for two days and nights prior to the assault bombers of 10 (Armstrong-Whitworth), 25 (DH4), and 27 (Martinsyde) Squadrons<sup>‡</sup> attacked railway junctions, aerodromes, and rest billets behind the German line. A prolonged and very thorough artillery bombardment preceded the assault; but, despite all these clear warnings, the Canadian staff work achieved its now customary standard of excellence and the troops fought so well that within an hour and thirty-five minutes all the key objectives had been taken and the summit of Hill 70 was firmly in Canadian hands.

No 16 Squadron furnished contact and artillery observation patrols for the ground attack and 8 (Naval) Squadron's Sopwith Camels<sup>§</sup> endeavoured to keep

\* As Chief of the Air Staff, 1940-5, Air Chief Marshal Sir Charles Portal (later Marshal of the Royal Air Force Viscount Portal of Hungerford) was to play a dominant role in the setting of allied air policy and the direction of the Commonwealth air forces during the Second World War. See Denis Richards, *Portal of Hungerford* (London 1977).

† Canadians serving in 40 Squadron during August 1917 included Kennedy (KIA 22 Aug. 1917), Harrison (WIA 12 April 1918), C.L. Bath of Toronto (WIA 3 Nov. 1917), and A.E. Godfrey of Vancouver. L.A. Edens of St John's, Nfld (KIA 18 March 1918) was also with the squadron.

‡ Canadian aircrew serving in 10 Squadron this month included W. Crowther of Welland, Ont. (KIA 31 Oct. 1917), W.E. Dexter, address unknown (WIA 3 Dec. 1917), R.C. Farrow of Vancouver, T.G. Gordon, address unknown, C.N. Milligan of Victoria (WIA 21 April 1917), G.M. Morrison of Amherst, NS, and W.G. Stuart of Cardston, Alta (WIA 13 Dec. 1917). Among those in 25 Squadron were D.L. Burgess of Ottawa, J.H. Kirk of Sussex, NB, C.T. Lally of Wainwright, Alta (WIA 8 Dec. 1917), P.L. McGavin of Toronto (KIA 14 Aug. 1917), E.A. Plamondon of St Hyacinthe, Que., F.A. Watson, address unknown, L.F. Williams of Fort Frances, Ont., G.S. Wood, address unknown, and A.J. Wright of Barrie, Ont. In 27 Squadron were C.N.F. Jeffrey of Winnipeg and A.E. McVittie of Sudbury, Ont.

§ Canadians serving in 8 (Naval) Squadron during August 1917 included H.H.S. Fowler of Bowmanville, Ont., A.R. Knight of Collingwood, Ont., S.H. McCrudden of Toronto, R. McDonald of James River Station, NS (KIA 8 May 1918), and H. McK. Reid of Belleville, Ont. (KIA 23 Feb. 1918).

the upper air clear of enemy fighters. However, it was two new tactical procedures intended to dislocate the inevitable German counter-attacks that particularly distinguished the air plan for the assault on Hill 70. Fighter aircraft patrolling at high altitudes (where they had to be if they were to meet the enemy fighters on equal terms) had always found it extremely difficult to spot low-flying enemy machines whose upper surfaces had been skilfully camouflaged to blend into the battle-scarred earth below. In the past German artillery observation and ground support aircraft had often been able to operate unchallenged at low levels even when the British had an immediate air superiority.

This problem was met by having six Nieuports of 40 Squadron stationed on an advanced landing ground at Mazingarbe and a ground observation station set up on the high ground west of Loos overlooking the battlefield. Whenever a low-flying enemy machine was seen over the front a message was wirelessly to Mazingarbe where a waiting Nieuport could take off immediately and be at the specified point within a few minutes. Then a system was developed that, by means of a letter code laid out on the ground in white canvas, permitted a machine already in the air and circling the landing ground to be directed to a particular target area. During the day sorties from this advanced landing ground resulted in two enemy aircraft destroyed, three shot down out of control, and a number of others driven off, as well as the frequent 'blinding' of the German artillery. Against this only one British machine was lost. The accuracy of the wireless messages was especially remarked upon, pilots reporting that in the majority of cases enemy aeroplanes were found at the height and locality indicated.\*<sup>75</sup> Indeed, Second Lieutenant A.E. Godfrey of Vancouver, one of the pilots detailed for duty at Mazingarbe, was credited with three victories in three days, starting on 15 August.<sup>†</sup>

The second new tactic also involved the use of an advanced landing ground, although in this case the purpose was to allow the machine concerned more time over the battlefield rather than to get it there quickly. No 43 Squadron, flying its obsolescent Sopwith 1½ Strutters out of Mazingarbe about five miles back, was employed all day in flights of three aircraft at a time, closely watching a zone about 7000 yards wide and 1500 yards deep behind the German lines where any counter-attacks must necessarily form up. In addition to reporting back to the British artillery liaison officers at the airfield, the crews were ordered to attack with their machine-guns any concentrations of infantry or artillery they might observe. The Sopwiths, although slow, were exceptionally strong. Despite being 'frequently hit' from ground fire which left four of them unserviceable by the end of the day, only two machines were lost and three airmen wounded, while one German aircraft was destroyed and several others driven away.

\* But it would seem that not all enemy aircraft were being reported. The 5th Canadian Infantry Battalion's War Diary for 14-18 August 1917 records that on the 16th '... German aeroplanes were very active flying at an extremely low altitude, and firing on parties of our men, spotting our new positions, and registering their batteries on them. Our planes flew much higher and part of the time did not appear to interfere with the Hun Machines, nor make any attempt to hinder their operations.' DHist 112.3H1.009 (p259), vol. II

† Godfrey's successes may have been due in part to his having fitted his Nieuport with a twin Lewis Gun mounting of his own design which enabled him to double his rate of fire. Godfrey biographical file, DHist

More important, many potential counter-attacks were broken up by pilots like Second Lieutenant S. McC. Peterkin of Toronto, who attacked 'a great number of troops' gathering in the Drocourt trenches from a height of 200 feet. A 1½ Strutter in which Lieutenant W.G. Bell of Toronto was flying as observer attacked a German transport column near Fouquières and then machine-gunned troops near Annay and in the Bois de Quatorze. Another Sopwith observed a body of German infantry estimated to be 1600 strong forming up behind the Bois de Dixhuit, about 3000 yards north of Lens. After a low-level machine-gun attack the aircraft returned to Mazingarbe, where a liaison officer telephoned the map reference of the enemy concentration to the Canadian Corps heavy artillery. In the cryptic words of 1 Brigade's official report, 'The counter-attack did not materialize.' No 16 Squadron, too, was busy spotting for the Canadian artillery; in the afternoon four waves of German infantry, marching across the open 'through fountains of earth sent up by the heavy shells' and then 'through a hail of shrapnel and machine-gun bullets' delivered by the BEs of 16 Squadron, were all but annihilated.<sup>76</sup>

The resumption of the Flanders offensive was preceded by a week of intense air fighting, marked on the British side by 60 Squadron's 'Billy' Bishop being credited with his 43rd and 44th victories on 13 August.\* With these successes Bishop surpassed the late Albert Ball's claims and was recognized as the top-scoring RFC pilot. Other aces, such as McCudden and Rhys-Davids and the Canadians McKeever, Godfrey, and 56 Squadron's Lieutenant R.T.C. Hoidge of Toronto (who was credited with sixteen victories by the end of July) continued to add to their personal scores, but the Allies were still far from having their own way in the air. On the German side, Werner Voss had returned from leave to take command of *Jasta 10* and his score was mounting steadily into the forties. By 31 July Richthofen, recovered from his wound, was flying again. On 16 August he shot down his 58th victim, and the next day presided over a celebration marking *Jasta 11*'s one hundredth victory. In this stern battle of attrition the toll of British casualties rose by over 100 during August, from 209 in the four weeks ending 27 July to 328 in the four weeks ending 31 August. On 13 August a letter from Sir Douglas Haig to the Chief of the General Staff, reflecting Trenchard's views, asked that the Admiralty be informed that the shortage of pilots in the RNAS squadrons attached to the RFC raised the possibility of a deterioration of their morale.<sup>77</sup>

If the assault on Hill 70 had been a demonstration of how a set-piece attack should be carried out, the Battle of Langemarck, which began the next day in front of Ypres, provided an excellent illustration of how it should *not* be done. The British air plan was hampered by a misty morning and cloud patches which made observation uncertain but the principles which had been so effectively applied at Lens were in any case diluted and much of their potential lost at Langemarck. There was still a grave lack of consistency in RFC staff work. One RE8 was to patrol each corps front to report counter-attacks, but this arrangement was by no means foolproof. Thus the 8th British Division, which had suffered over 3000 casualties on Pilckem Ridge only two weeks earlier, was struck by a powerful German

\* Other Canadians serving in 60 Squadron during August 1917 included J.B. Crompton of Toronto, W.J. Rutherford of Westmount, Que., and F.O. Soden, a New Brunswick-born pilot whose family was living in England.

counter-attack. Prior to it the division had received only one indefinite air report of enemy infantry forming up. Two DH5s were allotted to each divisional front for close ground support duties during the assault on the final objective, but the weather and the confused nature of the ground fighting prevented the pilots from properly fulfilling their role. Two patrols, of four Nieuports each, whose orders were to fly the whole Fifth Army front and help break up counter-attacks, tried to make up for the DH5's failures by engaging some of the enemy strong points holding up British attacks, but this inevitably distracted them somewhat from their other duties. They were also instructed, together with two other fighters, to drive off all low-flying enemy machines along the whole army front. Such wide-ranging and disparate orders demonstrated the failure of some RFC brigade staffs to appreciate the problems and pressures of combat flying.<sup>78</sup>

Ever since Bishop's spectacular low-level, single-handed fighter attack on a German aerodrome the possibility of destroying enemy machines on the ground by a series of individual assaults seems to have been much in the minds of British planners. Thus the air operation orders for the Battle of Langemarck instructed one fighter, armed with four 20-lb bombs, to attack each enemy airfield in the vicinity shortly after first light, with further attacks throughout the day as opportunity offered. None of these attacks appears to have done any significant damage.<sup>79</sup> The experience of 70 Squadron's Lieutenant J.G. Crang of Toronto\* was, largely by chance, one of the more successful. He was ordered to attack Bissegem.

I crossed the lines over ARMENTIERS [sic] and proceeded south of COMMINES and arrived over BISSEGEM aerodrome. I found it exactly in accordance with the photograph. All the hangars were closed; there were no machines on the ground and no people about.

I came up from the S.E. over two Bessonaux Hangars, and I dropped a bomb from about 500 feet over these hangars, but it fell on the road behind and a little to the right. I went straight across the aerodrome, diving down all the time, on two groups of R.E. Hangars on either side of some trees. I dropped all my bombs and observed one fall in the trees between the two groups of hangars.

I then circled round at about 100 feet and fired into the two Bessonaux hangars with both guns, but could see no effect. The aerodrome still presented a deserted appearance, the hangars all remaining closed, and nobody appearing on the scene ...

I then turned south and [about 2½ miles S.W. of Coutrai] ... I observed another aerodrome: there were at least five hangars ... I fired both guns into one R.E. Hangar from about 20 feet above, and as I crossed the aerodrome, I saw a 2-seater machine on the ground with nobody about.

I immediately turned back and fired both guns into it. As I did so I turned and observed the R.E. hangar, into which I had previously fired, in flames. The canvas had already burnt off, and I could see a 2-seater machine burning inside.<sup>80</sup>

Another notable effort on the 16th was that of Second Lieutenant R.D. Starley, a prewar English immigrant to Canada. He was flying a machine of 4 Squadron

\* Canadians serving in 70 Squadron during August also included R.S. Ashby of Greenwood, BC (WIA 15 Sept. 1917), J.W. Gillespie of Toronto (POW 19 Aug. 1917), J.C. Huggard of Winnipeg (POW 5 Sept. 1917), H.D. Layfield of Vancouver (WIA 21 Sept. 1917), A.A. Lessard of Haileybury, Ont., and A.J.S. Sisley of Toronto (KIA 10 Sept. 1917).

detailed for counter-attack patrols and had just located 'a large force of the enemy infantry who were about to attack' when his machine was hit by a passing shell. Two longerons, a main spar, a centre section strut, two fuselage struts, and the aileron balance wire of his machine were cut through, while his radio transmitter was also destroyed and his observer wounded. Starley flew his wrecked RE8 first to the divisional HQ, where he dropped a written message which led to nine artillery batteries being switched on to the German concentration, and then back to his base at Abeele. He was awarded an MC for his efforts. Many others were not so fortunate. No 9 Squadron, attached to XIV Corps, lost twelve aircrew killed when their machines were hit in the air by shells from the British barrage.<sup>81</sup>

But generally speaking, in the air as on the ground, the courage and skill of the fighting man were not sufficient to overcome the poor staff work and over-optimism of the higher commanders. The inefficient use of resources, vagueness of assignment, and dispersion of effort ensured that no aspect of the low-level plan proved quite adequate. The German artillery concentration behind the Gheluvelt plateau continued to punish the attackers on the ground both during and after the assault. Prompt counter-attacks drove the British back from many of their gains. Although the remnants of Langemarck village had been taken and held by night-fall, and the salient deepened by more than a mile at one spot, nothing of consequence had been gained. The enemy was basing his defence on the bastions of Gheluvelt plateau and the Forêt d'Houthuilst; as long as they were secure a British advance in between them was of little consequence.<sup>82</sup>

During all this time bombing continued to absorb a large percentage of resources. Whenever the weather permitted the high-level day bombers of the RFC plugged away at enemy aerodromes and communication and transportation centres without any very noticeable effect, while the night bombers attempted similar raids from much lower heights with similar results. The combination of difficulties imposed by First World War navigation techniques and bomb-sight technology, added to the comparative paucity of bombers and their limited weight-carrying capacities in relation to their objectives, made bombing a questionable proposition. Its main effect may have been to harm enemy morale, to judge from the effect of German night bombing on British troops. In mid-August, for example, one British battalion bound for the Ypres Salient and encamped behind the town, found its twelve nights there 'almost nightmares. We had very little sleep, for instead of one visit from the enemy bombers, they came over in relays and sometimes we had four doses in one night.'<sup>83</sup>

While the great Flanders offensive petered out in the mud and degenerated into limited, expensive, but largely vain attempts to gain minor tactical advantage, the struggle for air superiority went on unabated. On 21 August an RE8 of 7 Squadron flown by Second Lieutenant M.A. O'Callaghan of New Westminster, BC,\* was attacked by four Albatros scouts while taking photographs near St Julien. O'Callaghan's observer opened fire on the nearest and sent down in

\* O'Callaghan was wounded in action on 8 October 1918. Among other Canadians serving in 7 Squadron during August 1917 were G.W. Butchart of Owen Sound, Ont., L.V. Gray of Vancouver (KIA 16 Aug. 1917), R.H. Jarvis of Toronto, B.W. Ryan of Calgary (KIA 20 Sept. 1917), and G.F. Turberville, address unknown.

flames *Oberleutnant* Eduard Dostler, the CO of *Jasta 6* with twenty victories to his credit. The next day a patrol of Naval Ten, led by 'Mel' Alexander, intercepted a number of Albatros scouts which were attacking a formation of DH4s. In the dogfight that followed Flight Sub-Lieutenant J.G. Manuel of Edmonton, who had joined the squadron on his first operational posting only nine days earlier, destroyed one enemy machine and drove another down out of control, while Alexander and Flight Sub-Lieutenant G.L. Trapp were each credited with one out of control. This marked Alexander's third victory in five days, a feat which won him the DSC.<sup>84</sup>

By the end of August the Flanders offensive had cost the British some 68,000 casualties for very little gain in ground, but it had ensured that the French front would remain free from major attack for another month. The navy's anti-submarine campaign and convoy system was also proving successful. It might seem, therefore, that the Cabinet and War Policy Committee could now have cancelled the offensive. Lloyd George personally wished to do so, but on 4 September Haig once again convinced the politicians in London that the offensive must be maintained and the Germans prevented from taking the initiative.<sup>85</sup>

The Commander-in-Chief had already decided that, in view of the casualties of the Fifth Army, the principal role in any further operations must be transferred to the Second Army. Haig had enlarged General Plumer's command to include much of the Fifth Army and ordered him to prepare an attack between the Ypres-Comines canal and the Ypres-Roulers railway, with his axis of advance on the Menin Road and his main objective the Gheluvelt plateau. Plumer asked for and received three weeks for his preparations.<sup>86</sup> This lull in the ground fighting was distinguished by the best weather of the whole campaign.

With clearer skies air fighting increased and formations grew significantly in size, as the tactics of aerial combat changed and the air battle of attrition approached its climax. The Germans were now attacking British corps machines in formations of two layers, the upper echelon being intended to keep any British fighters busy while the lower one 'went in and did fearful execution among the FE's.' The British answer was to develop an additional layer for their own fighter patrols, so that squadron formations were now seen over the front. The enemy promptly retorted with three-layered formations, in which the first two engaged the two echelons of British fighters while the third, biding its time, waited until the others were engaged and then attacked the corps machines. The RFC response was the predictable one of also introducing a third layer, so that as many as sixty machines might be involved in one engagement. The nature of the actual combat was changing as well. One pilot reported that 'large formations don't mix it like small ones. Instead of short close-up dog-fights, with in-fighting and duels and quick results, we're having long-drawn-out skirmishings between massed groups taking nibbles at each other.'<sup>87</sup>

But such massive engagements did not occur every day. On a smaller, more frequent scale, corps machines continued to be shot down for lack of close protection by fighter escorts; British offensive patrols of four, five, or six machines, flying deep over enemy territory, continued to be whittled down by enemy anti-aircraft fire and engine failure, as well as the inherent disadvantages of fighting on

the enemy's terms. There were 276 RFC casualties on the Western Front during the four weeks ending on 28 September, at least forty-five of them Canadians. The rate of casualties per hundred sorties rose from 7.97 in August to 8.06 per cent, a figure only surpassed when the RFC had been so disastrously outclassed technologically in the spring of the year.<sup>88</sup> There was, however, no alteration in General Trenchard's relentless policy of total offensive. The merit of an offensive strategy combined with defensive tactics which might have saved both men and machines was apparently never seriously considered at RFC Headquarters. Indeed, although Trenchard made frequent visits to his front-line units, it is not at all clear whether he appreciated fully the morale problem developing in his squadrons.

Those outstanding pilots whose actions and opinions have since been most frequently recorded and dramatically presented seem – perhaps naturally, since they were the most successful – to have felt these pressures less than most aircrew. Very little has been written about the morale problems which developed among ordinary flyers during the summer and early fall of 1917, but one undistinguished participant has recorded how

Our casualties mounted alarmingly. There was hardly an evening when the same people gathered in the mess. It was here that a certain amount of frank and free comment on our casualty rate could be heard ... our commanding officer discouraged it; but it continued ... We did not believe that the losses we were suffering were helping the allies in their war effort.

This feeling, although officially looked on as defeatist, was prevalent among operational pilots ... Officers of the higher command, from Major-General Hugh Trenchard as he was then, down to the commanders of wings, according to the critics, were throwing away aircraft and lives for no distinguishable purpose. At any rate they did not convince their pilots that there was a purpose. The aim seemed to be to contrive the greatest number of confrontations of British and German aircraft and to have the greatest number of battles in the air. To us junior officers there was no discernible military objective.<sup>89</sup>

In the trenches infantry subalterns were saying the same kind of things about Haig and his generals.

Squadron commanders sometimes privately shared the feelings of their pilots. While admiring Trenchard's integrity and 'the magnificent influence that he exerted in France,' Major W. Sholto Douglas, commanding 84 Squadron,\* makes it clear in his memoirs that he, too, questioned the inflexibility of Trenchard's policy.<sup>90</sup> His doubts, and Haig's and Trenchard's own tentatively expressed fears of a crisis in morale amongst their airmen, were to be disagreeably vindicated before the end of the month.

In the meantime General Plumer was assembling the resources of both the Fifth and Second Armies for the Battle of the Menin Road. The weight of the

\* Douglas ended his career as Marshal of the Royal Air Force, Lord Douglas of Kirtleside. Included on the strength of 84 Squadron when he took it to France in September were W.H. Brown of Victoria, W.R. Kingsland of Ottawa (POW 18 Nov. 1917), T.V. Lord of Fenelon Falls, Ont. (POW 15 Oct. 1917), P.J. Moloney of Peterborough, Ont. (WIA 22 Nov. 1917), and F.L. Yeomans of Belleville, Ont. (POW 21 Oct. 1917).

attack would be on the Second Army front and the initial operations order for II Brigade, RFC, showed an improved understanding of the need to provide support for corps machines by establishing a two-layer system of protective fighter patrols over the battle zone, with the upper layer operating at a height of about 10,000 feet and the lower patrols being ordered to 'go right down' if necessary to protect corps aeroplanes. But there were still unreasonable demands included in the operation orders. It was carefully stipulated that 'no formation of more than six Scouts is permitted.' In addition, three pairs of ultra low-level (less than 500 feet) 'rover' scouts were detailed primarily to 'attack parties of enemy infantry, artillery and transport' along the entire army front. They were to give 'special attention ... to the discovery and attack of the enemy's Counter Attack troops.' The 'rovers' were also to report 'any information' which might be useful to the Army Report Centre established at Locre. In other words, while flying their machines at a dangerously low level, attacking any ground targets noticed, and keeping a weather eye open for developing counter-attacks, these aerial paragons were to fight any enemy contact patrols or scout aircraft which they might encounter and write, on 'cards conveniently fixed in the nacelle,' particulars of anything happening on the ground which they felt might interest Army Headquarters. These cards then had to be dropped in message bags on a spot nearly nine miles from the battleground.<sup>91</sup>

Another planning weakness lay in the noticeable absence of arrangements to have any fighter element on stand-by at an advanced landing ground in the manner which had proven so successful at Hill 70. Here the II Brigade staff was in a difficult position. By mid-August British field commanders had realized that fighter aircraft were useful for more than air fighting and had subsequently suggested to higher authorities that they should be allowed to make fuller use of them in ground support roles. GHQ took up the idea with alacrity, but on 19 September General Trenchard laid down that 'the number of fast fighting machines at present available does not admit of such a large proportion being allotted for these operations.' Trenchard's concern was the maintenance of his offensive patrols and, with this sort of disagreement occurring at the highest levels, the predicament of RFC brigadiers endeavouring to please two masters was not enviable.<sup>92</sup>

Not surprisingly, when the battle was joined on 20 September, the enemy was able to make good use of his ground support and trench patrol aircraft.\* The Australians, advancing to their final objective on the Second Army's left flank, were machine-gunned by a formation of eight aircraft which also strafed the field artillery batteries behind them. The 9th (Scottish) Division found that 'while the consolidation was in progress a hostile aeroplane, flying up and down our line, roughly indicated the position to the German gunners.' The next day 'the German artillery, assisted by aeroplanes, persistently shelled our battery areas,' reported

\* By the fall of 1917 the Germans were using specialized machines for both these roles. The Junkers J-1 *Infanteriefleger* was framed in metal and the wings covered with corrugated sheet duralumin; the only non-metallic elements were the ash tail skid and the fabric that covered the fuselage behind the 5mm armour that housed engine, pilot observer, and fuel tank. The two-seater Halberstadt CL-11 was the first aircraft specially designed for ground attack. It also had an armoured shell for engine, crew, and fuel tank, but was otherwise built of wood and fabric. Being much lighter, it was faster and more manoeuvrable than the J-1 *möbelwagen*.

the 23rd Division historian; two days later, 'hostile artillery and aircraft were very active.'<sup>93</sup>

In other respects, however, the RFC did much better. During the 20th there were a total of 108 air combats recorded along the battlefield but only ten of them involved corps machines, indicating that the policy of layered protective patrols was working well. Consequently, once the morning mist had cleared the corps machines had a most successful day, 394 zone calls being sent down to the artillery, about one-third of them bringing immediate fire responses. There were also at least eight instances of imminent counter-attacks being broken up by artillery fire which, by the Germans' own accounts, 'tore great gaps in the advancing companies and caused complete disorganization.'<sup>94</sup>

At first light the usual attacks were made on all the German aerodromes in the vicinity. This time, instead of single-seater fighters, Martinsyde bombers of 27 Squadron\* hit all four fields of the Richthofen Circus simultaneously and inflicted serious damage in at least one case. Richthofen's own *Jasta 11*, at Marcke near Courtrai, sustained the heaviest attack, three machines being destroyed, four damaged, and four ground crew killed with a number of others wounded,<sup>95</sup> and this success may have played a part in the German failure to challenge successfully the British high-altitude offensive patrols on the 20th.

The aircraft allocated to ground support also provided very useful assistance on occasion, 70 Squadron's Second Lieutenants F.G. Quigley of Toronto and H.D. Layfield of Vancouver† being singled out for their work in suppressing fire from enemy machine-gun emplacements. Second Lieutenant J. MacHaffie of Oakville, Ont., serving with 29 Squadron‡ and destined to be killed the following day, 'swooped down on a party of about 70 enemy troops on the POELCAPPELLE-WESTROOSBEKE [sic] road and scattered them,' while 23 Squadron's Lieutenant G.A.H. Trudeau of Longueuil, Que.,§ 'attacked enemy infantry ... from 500 feet and scattered them.' He then returned to strafe the villages of Passchendaele and Westroosebeke 'from a low altitude, scattering several bodies of troops. He also dispersed troops on the roads north-west of ZANDVOORDE.'<sup>96</sup>

No 1 (Naval) Squadron made a very strong impression on the enemy with what the squadron diarist chose to describe as 'crawling patrols.' Among the most

\* Canadians serving with 27 Squadron in September 1917 included A.E. McVittie of Sudbury, Ont., and E. Waterlow of Regina (KIA 16 July 1918).

† Layfield was wounded in action the next day. Other Canadians in 70 Squadron in September included R.S. Ashby of Greenwood, BC (WIA 15 Sept. 1917), R.O. Babbitt of St Thomas, Ont., E.B. Booth of Toronto (WIA 11 Nov. 1917), H. Cook, address unknown (KIA 17 Oct. 1917), T.B. Fennick of Cranbrook, BC (POW 26 Sept. 1917), W.H.R. Gould of Uxbridge, Ont. (KIA 26 Sept. 1917), J.C. Huggard of Winnipeg (POW 5 Sept. 1917), E.D. Neal of Toronto (WIA 30 Sept. 1917), C.W. Primeau of Toronto (KIA 27 Oct. 1917), C.D. Scott of Vancouver (KIA 30 Sept. 1917), and A.J.S. Sisley of Toronto (KIA 10 Sept. 1917).

‡ Canadians in 29 Squadron included S.L. Crowther of Toronto (KIA 20 Sept. 1917), D.A.F. Hilton of St Catharines, Ont., E.S. Meek of Sandford, Ont., F.M. Nash of Charlottetown, PEI (POW 3 Oct. 1917), and G.B. Wigle of Ruthven, Ont. (WIA 10 Oct. 1917).

§ In 23 Squadron Canadians in addition to Trudeau included G.I.D. Marks and N. McLeod (KIA 14 Oct. 1917), both of Toronto, R.M. Smith of Ottawa (POW 31 Oct. 1917), and E. Taylor of Vancouver (WIA 14 Sept. 1917, POW 26 Sept. 1917).

notable attacks recorded, Flight Sub-Lieutenant S.W. Rosevear of Port Arthur, Ont., poured four hundred rounds into a column of troops he found on the road northeast of Becelaere and 'caused general panic. Pilot saw a number of dead on the road as he was leaving and others ran into the ditches.' On a second sortie Rosevear 'used all his ammunition up on small scattered bodies of troops near the YPRES-ROULERS railway and E. of POLYGONE [sic] WOOD.\*' Flight Sub-Lieutenant A.G.A. Spence of Toronto, on his second sortie of the day, strafed a force of enemy troops in the vicinity of a large dug-out, driving them into it and pinning them there for some time before causing some casualties on a nearby road. Meanwhile his fellow Torontonian, Flight Sub-Lieutenant W.M. Clapperton, fired 250 rounds at a group of enemy infantry near Becelaere (they 'scattered wildly in all directions') and got his Sopwith Triplane 'riddled from machine gun and rifle fire' in return.<sup>97</sup>

Although these operations may have influenced the progress of the battle, fully effective ground attack techniques still had to be developed by the RFC. It was claimed that more than 28,000 rounds were expended against ground targets during the day, yet a study of all available ground support reports suggests that comparatively few pilots were willing to expend more than one drum of Lewis ammunition per sortie against their ground targets. This reluctance may have been a result of burdening them with too many different tasks, thus making them hesitant to over-emphasize any one. Not until the Battle of Cambrai in late November would there be any real attempt to implement a training programme for units allocated specifically to ground attack roles. This was particularly unfortunate since German infantrymen were already being trained in the use of machine-guns against enemy aircraft and, as Rosevear commented in a letter to his parents in Port Arthur, 'we paid for it in the pilots missing.'<sup>98</sup>

By the end of the day the British armies were firmly astride the plateau and the following days were marked by a series of local attacks and counter-attacks as both sides attempted to improve their positions. On 26 September the British attacked again with the objective of occupying the rest of Polygon Wood, the summit of Hill 40 north of Zonnebeke station and the southern part of Zonnebeke village. For a change, reasonable flying weather prevailed and very effective air-artillery co-operation in breaking up German counter-attack formations limited the still high rate of British ground casualties. German casualties were so heavy that their High Command felt compelled to make major changes in their defensive

\* After winning the DSC and Bar and being credited with twenty-three victories, Rosevear was killed in action on 25 April 1918. Other Canadians with 1 (Naval) Squadron during its February to November tour with the RFC included E. Anthony of Maitland, NS, W.J. Beattie of Stratford, Ont. (KIA 30 Sept. 1917), C.G. Brock of Winnipeg (WIA 21 Aug. 1918), C.W.L. Calvert of Toronto (WIA 26 Sept. 1917), W.H. Chisam of Edmonton (WIA 8 April 1918), W.M. Clapperton of Toronto (WIA 27 Oct. 1917), E.D.G.W. Desbarats of Montreal (POW 20 Sept. 1917), J.H. Forman of Kirkfield, Ont. (WIA 28 July 1917, POW 4 Sept. 1918), A.P. Haywood of Toronto (WIA 30 April 1917), J.E.C. Hough of Winnipeg (MIA 24 Oct. 1917), H.M. Ireland of Toronto, P.W. Jenckes of Sherbrooke, Que., R.E. McMillan of Jacquet River, NB (POW 19 Sept. 1917), G.B.G. Scott of Guelph, Ont. (KIA 3 Sept. 1917), W.N. Smith of Sudbury, Ont., A.G.A. Spence of Toronto (WIA 8 Nov. 1917), H.D.M. Wallace of Blind River, Ont. (KIA 7 June 1917), H. leR. Wallace of Lethbridge, Alta, and J.R. Wilford of Lindsay, Ont. (POW 13 Sept. 1917).

tactics. Their main line of defence was strengthened and the concept of immediate counter-attacks was abandoned in favour of a policy of pre-planned, systematic strikes delivered the following day, when the German artillery might be more effectively ranged. However, this delay also permitted the British troops to consolidate their gains.<sup>99</sup>

For the bombing squadrons of both sides the last week of September was a lucky one. A German attack on the RNAS depot at St Pol, near Dunkirk, on the evening of 24 September destroyed the engine repair shop, sawmill, machine shop, spare engine shop, engine packing shed, and the drawing and record offices. One hundred and forty aero engines were lost, including 93 Clergets which powered the new Sopwith Camels. The raid was repeated each night for a week, culminating on 1 October when twenty-two Gothas and two smaller bombers dropped about one hundred bombs weighing approximately ten tons on the same target. Twenty-three more machines and nine more engines had to be written off, while thirty other aircraft suffered minor damage that night.<sup>100</sup>

The British bombing success was more ephemeral but nevertheless established a new yardstick for this type of operation. Thus far all the RFC's bombing of bases, aerodromes, bridges, railways, and depots had met with little success, but on the night of 27-28 September 100 Squadron launched another in its long series of raids against Ledeghem station, halfway between Menin and Roulers and a key point on the lateral rail line which distributed reinforcements and supplies to the German battlefield. Eight 230-lb, six 112-lb, and forty-two 25-lb bombs were dropped, 'practically all of which hit the Station or Buildings in vicinity of same.' The damage 'threw out of joint part of the German railway system for two days.' Canadians taking part in the raid included two pilots, Second Lieutenants G.M. Turnbull of Mannville, Alta, and L.M. Archibald of Toronto, and three observers, Lieutenants S.M. Duncan of Ottawa, R.C. Pitman of Saskatoon, Sask., and A.H. Thompson of Penetanguishene, Ont.\*<sup>101</sup>

The corps work of the RFC was spectacularly successful during the month of September, not only because of the courage and skill of the aircrew but also because of careful standardization of the methods of ranging artillery and of communication between observers and the batteries. Ground support was becoming sufficiently important to warrant its own section in brigade war diaries, even though the organization and training now lavished on artillery observation had not yet been extended to this newer function. Many Canadian pilots were singled out for mention in this particularly dangerous and unpleasant work during the month.<sup>102</sup>

Above the corps machines and the ground support details, the harsh, inexorable battle for air superiority went on throughout the month. Both sides were adhering to their established tactical concepts; on each side of the line new pilots joined their squadrons, began operational flying, and were shot down. The lucky few who

\* Archibald became a POW on 24 October 1917 and Pitman on 17 September 1918. Other Canadians serving with 100 Squadron at this time included J.J.L. Drummond of Spencerville, Ont., J.W. Edwards of Cataraqui, Ont., J.S. Godard of Ottawa (POW 24 Oct. 1917), W.K. MacNaughton of St Johns, Que., J.J. O'Loughlin of Toronto, J.W. Price of Moncton, NB, and V.E. Schweitzer of Portage la Prairie, Man.

survived their first two months at the front to become experienced hands concentrated primarily on survival, while the even fewer aces steadily increased their victory scores. The famous Richthofen *Geschwader* (whose leader was on leave for the whole of the month) was piling up an impressive record of 'kills.' On the British side 56 Squadron, which had come to the Front in April flying the first of the new, two-gun SE5s and had been the first to re-equip with the more powerful SE5as, chalked up its two hundredth victory on 30 September.<sup>103</sup> Elite squadrons, as well as individual aces, were now recognizable on both sides of the lines.\*

Among the Canadians, two days earlier 11 Squadron's A.E. McKeever had downed two enemy fighters over Bugnicourt, marking the sixteenth and seventeenth victories credited to him and his various observers. Earl Godfrey had been awarded an MC and posted to home defence during the month after being credited with his twelfth victory. R.T.C. Hoidge of 56 Squadron had added six victims to his total during September, the penultimate one coming on the 23rd in the course of a patrol in which his colleague, Rhys-Davids, shot down the great Werner Voss. Voss, trapped while attacking a straggler from another British formation, chose to fight rather than run and for ten minutes fought single-handedly against seven British machines, putting bullets through each of them before falling to his death behind the British lines. His death was a great blow to German morale. 'His flying was wonderful, his courage magnificent, and in my opinion he is the bravest German airman whom it has been my privilege to see fight,' wrote the top British ace, James McCudden.<sup>104</sup>

The RFC had a morale problem too, but the British crisis was kept secret at the time and one of the most bizarre episodes in First World War aerial operations was successfully buried in the files. On 28 September Lieutenant-Colonel F.V. Holt, who commanded 22 (Army) Wing of the RFC's V Brigade, had ordered a major low-level bombing and strafing attack of Rumbeke aerodrome. The attack was made by Naval Ten,<sup>†</sup> supported by 23 and 70 Squadrons. The RNAS pilots bombed their target and fired 1420 rounds into ground targets on the field, but they failed to come down below 3000 ft to do so, so that 'the value of the operation had been at least halved.' When Holt complained, however, the newly appointed acting Squadron Commander, Flight Commander R.F. Redpath of Montreal,<sup>‡</sup> and the British officer who had actually led the sortie both assured him that the failure

\* Captain J.T.B. McCudden was the outstanding pilot with 56 Squadron. Canadians who flew with the squadron during the period include V.P. Cronyn of London, Ont., J.N. Cunningham of Moose Jaw, Sask. (POW 18 Oct. 1917), B.W. Harmon of Stanley, NB (WIA 2 Dec. 1917, KIA 10 May 1918), R.T.C. Hoidge of Toronto, R.T. Townsend, address unknown (KIA 30 Nov. 1917), L.J. Williams of Vancouver, and R.W. Young of Toronto.

† Canadians serving with Naval Ten at this time included W.M. Alexander, E.I. Bussell, R.E. Carroll, W.A. Curtis, and W.N. Fox (WIA 21 Oct. 1917), all of Toronto, H.J. Emery of Edmonton, W.C. Johnston of Copper Cliff, Ont. (WIA 24 Sept. 1917), J.G. Manuel of Edmonton (WIA 9 May 1918), K.V. Stratton of Aylmer West, Ont., and G.L. Trapp of New Westminster, BC (KIA 12 Nov. 1917).

‡ Redpath, after making a name for himself on the Western Front and with the Luxeuil Bombing Wing, had only come to Naval Ten three days earlier. He never again held an operational command in wartime but did become, in 1921, the second Director of the newly formed and short-lived Canadian Air Force.

was because of a misunderstanding of the orders and that 'the Squadron would like the chance of doing the operation again.'<sup>105</sup> What happened next can best be described in Holt's own words:

On September 30th, as weather and activity conditions appeared suitable for a repetition of the operation, I called up Flight Commander Redpath about 11.45 am, and told him that I proposed repeating the operation in exactly the same way as on September 28th, but having the rendezvous at 2.0 pm. ... He then asked to put it off for the day to which I objected, as the conditions were very suitable. He then said that 'his pilots weren't for it.' I tried to point out to him what a serious statement he had made and asked if he was quite certain that he was truly representing his Squadron, as I couldn't understand it. He informed me that he was, and I then told him that an original situation had been created which I must report to the G.O.C. Brigade, and in the meantime the operation would be off. About ten minutes afterwards he rang up to say that he had a counter suggestion for another operation to replace the one that I had ordered, and I told him that I was coming over in the afternoon and would hear it then.

I went over in the evening and Flight Commander Redpath's suggestion was that the bombing attack should be carried out with D.H.4.s instead of Scouts. I explained that if an Infantry Battalion, when told to attack, suggested that the operation would be better performed by cavalry, it would be a similar suggestion to his. I again asked him if he was quite sure that he was fairly representing his pilots and asked why they had behaved in such an extraordinary way. He replied that they did not consider that the probable results were worth the risk to machines and pilots. I pointed out that one couldn't run a war on those lines and that the orders were very carefully considered before being issued.<sup>116</sup>

Holt did not again order the operation to be carried out after Redpath's determination had become evident, 'as a refusal would have led to a very serious situation,' nor did he personally interview the pilots concerned. In fact, it would seem that most of the squadron knew nothing about this disagreement between their seniors. Certainly Flight Sub-Lieutenant W.A. Curtis, a future Air Marshal of the RCAF, knew nothing of it, although he did know that the British flight commander concerned no longer cared for operational flying. The problem appears to have been created by the reliance of a very recently appointed acting squadron commander upon the claims and views of one of his senior flight commanders who was his equal in rank and experience but who had, temporarily at least, lost his nerve.<sup>107</sup> It may also have been compounded by a personality clash between the rather fiery Holt and the sometimes stubborn Redpath. But none of this information was available to Holt's superiors (and some of it not to Holt); they were faced with an apparent mutiny of a squadron with a magnificent fighting record at a moment when the pendulum of air superiority, although swinging in the British favour, was still quite delicately balanced.

In this 'original situation' there were really only two courses of action open to General Trenchard. He could risk bringing the whole question of fighter pilot morale on the Western Front to a head by instituting formal proceedings against the responsible officers of Naval Ten, with all the attendant publicity which that

must bring, or simply remove the whole squadron from centre-stage for a while, hoping that the incident would then pass unnoticed and that there would be no repercussions among his remaining squadrons and especially among the other RNAS squadrons under his command. In the past Trenchard had always been a notable disciplinarian and it may be a measure of his own uncertainty about the morale of his force at this time that he chose the latter alternative. The squadron was quickly transferred to IV Brigade while the necessary arrangements were made, and on 20 November it was moved out of the RFC sphere entirely, to 4 Wing, RNAS, at Dunkirk.\* Even Trenchard's memorandum to GHQ confirming his intention to return Naval Ten to RNAS command did not mention why this was being done, remarking only (in a handwritten addition to a typed letter) that it was 'according to previous correspondence,' which does not seem to have been preserved.<sup>108</sup>

The wisdom of this decision became apparent almost at once. The air war was now 'peaking,' winter was approaching, and aircrew could look forward to a period of comparative placidity that would allow morale to recover to some degree. When major combats did occur they were likely to be as uncompromising as ever,<sup>†</sup> but both total casualties and the percentage of casualties per hundred machines leaving the ground decreased slightly during the next month. Indeed, while the RFC had incurred 434 officer casualties during the fifty days that elapsed between the opening battle of Third Ypres on 31 July and 19 September, in the sixty days between 20 September and the beginning of the Cambrai offensive on 20 November it lost no more than 247, a reduction in the casualty rate of better than 50 per cent.<sup>109</sup> This can only partly be explained by the reduction of daylight flying hours and the deterioration of the weather that accompanied the onset of winter.

At the beginning of October the main axis of the British ground attack was swinging northwards towards the eastern end of the Gheluvelt plateau and the village of Passchendaele, in the hope of gaining the Passchendaele-Staden ridge by the end of October. General Plumer's step-by-step technique had proven itself sufficiently to be continued and Haig still harboured illusions of an eventual cavalry breakthrough. On 4, 9, 12, 22, and 26 October additional small patches of watery mud were wrenched from the Germans at a cost of a hundred thousand casualties.<sup>110</sup> But there was no breakthrough.

There was little attempt to develop further aerial initiatives during the latter stages of the Passchendaele battle. High winds, heavy drizzle, low cloud, and poor visibility greatly reduced the efficacy of the air operation. Although there was still no formal training in ground support work for the British pilots, selected squadrons were now detailed to concentrate on this type of activity. No 84 Squadron,

\* On 27 March 1918, as the first great Ludendorff offensive once again strained the RFC's resources to their limits, Naval Ten was returned to RFC control under the Commanding Officer who had led it before Redpath took over. He retained command of the squadron until the end of the war.

† *Jasta 7*, for example, shot down two Camels, a Bristol Fighter, and a DH4 in less than two hours on 18 October. William R. Puglisi, 'Jacobs of Jasta 7,' *Cross & Cockade Journal*, vi, winter 1965, 313

commanded by Major W.S. Douglas and newly formed in England, was one of them: 'All through October we fought up and down the Menin-Roulers road to the east of Ypres. It was a hard school for a new and untried squadron; and at first, owing to the inexperience of the pilots (only the flight commanders had been overseas before), we suffered heavy casualties. But bitter experience is a quick teacher.'<sup>111</sup> Two of the five Canadians in the squadron when it arrived in France were among those lost, Lieutenant T.V. Lord of Fenelon Falls, Ont., taken prisoner on the 15th and Second Lieutenant F.L. Yeomans of Belleville, Ont., on the 21st, while Lieutenant G.R. Gray of Victoria, who had joined as a replacement on the 18th, was killed on the 31st.<sup>112</sup>

These low-flying sorties undoubtedly had an effect. One German soldier wrote: 'His [the British] airmen perform magnificent deeds and fire on us in shell-holes from a height of 50-30 yards.' The British machines, however, worked in ones and twos and the pilots, 'with freedom to make our own choice of values,' all too often wasted their ammunition on small parties taking cover in shell holes rather than concentrating their efforts on artillery and supply teams or massed bodies and marching columns of troops where they could do the most damage. In contrast, although the German *Schlachstaffeln* may have flown less often, they tended to fly to more purpose. On 24 October the Princess Patricia's Canadian Light Infantry, moving up for the final attacks on Passchendaele, were 'bombed in broad daylight by squadrons of attacking planes in groups of eleven and thirteen at a time.' Two days later, during the battle, the historian of the 31st Battalion, CEF, reported that 'In broad daylight they would fly in squadrons low over the crowded roads of the rearwards areas, bombing and machine-gunning infantry on the march, artillery and transport ...'<sup>113</sup>

It was recognized that 'complaints about low flying enemy machines are usually well founded.' Fighter aircraft were not normally held on alert at advanced landing fields, as they had been at Hill 70. Ground observation posts were in use, but their personnel were poorly trained and their procedures were slow and inefficient. The reports of the gunners or infantrymen who usually manned these posts were 'frequently inaccurate and always arrive[d] too late to allow action to be taken,' and it was not until late October that Lieutenant-Colonel Holt, on the basis of experiments he had made during the month, was prepared to recommend a properly thought-out system of trained observers in telephone and wireless communication with the various wing headquarters. Ground troops thus had to protect themselves from aerial attack. 'It must be clearly understood that the duty of defending themselves against low flying a/c rests with the Infantry. Our own a/c cannot effectively deal with them but recent experience on this front has conclusively proved that rifle and M.G. fire from the ground is most effective for the purpose,'\* proclaimed the staff of the Canadian Corps, which was preparing to move into the salient. A

\* The 2nd Canadian Division Order of 31 October 1917 illustrated this statement by pointing out that, on 26 October, '2 of our low flying fast scouts were brought down by hostile rifle and M.G. fire while out of a patrol of 12 scouts, 11 machines were considerably damaged by the same means.' '25th Canadian Infantry Battalion,' 6, DHist 112.3H1.009(D259), vol. II. For instructions to German anti-aircraft gunners see translation of German paper, 'The Employment of Machine Guns in Trench Warfare,' 10 Sept. 1917, DHist ss 707.

line of anti-aircraft Lewis guns was established about 300 yards behind the front and 400 yards apart, with a second line of heavier machine-guns to be set up 1000 yards back and 800 yards apart all along the Corps front.<sup>114</sup>

The gallant crews of the RFC's corps machines did not find it so easy to protect themselves. The acting CO of a fighter squadron, paying his first visit to the trenches, 'saw two, if not three R.E.8's shot down on the front line, and the picture that stuck in one's mind was entirely one of Corps aeroplanes, continually under fire, molested and harassed, chased and shot down.' It was not a true picture but there was enough truth in it to make many airmen question the validity of a policy which kept the bulk of the British fighter force engaged on high-altitude offensive patrols of one kind or another. But not until the last attack of the month – the opening of the so-called Second Battle of Passchendaele – was any significant modification attempted. Then the core of the offensive patrols, from 11 Wing, were ordered to start their activities a little earlier in the day, so that 'our front line will be patrolled at a low alt.[itude] until it is fully light. Patrols will then proceed to a rendezvous well within our lines, gain a sufficient height and continue their normal patrol. The last patrols of the day will gradually descend and close on our front line as light fails.'<sup>115</sup>

The British failures were all ones of defensive policy, however, and offensively the Germans were now receiving as much as or more than they could give. On 20 October, for example, V Brigade's 22 (Army) Wing launched another multiple bombing and machine-gunning attack against Rumbeke aerodrome. Half of 70 Squadron went in at 400–500 feet, closely protected by the other half, and with 23 and 28 Squadrons providing 'top cover.' The field, its machines and personnel were thoroughly bombed and strafed. On the return journey another airfield was briefly attacked and 'various ground targets were engaged by Machine Gun fire, one being a train on the ROULERS-MENIN Railway, whose occupants were seen to rush out and dive into ditches each side of the railway.'<sup>116</sup>

Perhaps more important, seven enemy machines were destroyed in the air during the operation, four by 70 Squadron. One of 70's victims fell to the combined guns of three young Torontonians, Second Lieutenants E.B. Booth, C.W. Primeau, and F.G. Quigley. All three were also mentioned for their strafing activities. Second Lieutenant A. Koch of Edmonton, who had served as an observer in 6 Squadron during 1916, had joined 70 Squadron on his first operational posting as a pilot only two weeks earlier. He was part of the covering force when he was attacked from behind and above by enemy machines: 'He fired about 20 rounds at almost point blank range into the first machine which came near him, causing it to go down out of control. Then he fired 80 rounds into a second E.A. which was attacking another British machine, probably forcing it to land. Towards the end of the engagement 2/Lieut KOCH was pursued by three other scouts which, however, he out-manoeuvred, finally crossing his own lines at 400 feet.'<sup>117</sup> From his earlier experiences Koch knew something about air combat, but this account of a fledgling pilot's success suggests that the general level of competence of German airmen was declining. Support for this suggestion also comes from 28 Squadron which was on its first mission over the lines. Two of its three victims fell to the guns of novices, although the third was shot down by one of their experienced

flight commanders, Captain William George Barker, a former observer and pilot with 15 Squadron who hailed from Dauphin, Man.\*<sup>118</sup> Barker had time for two more victories over the new Albatros D-Vs before his squadron was posted to Italy at the end of the month, but he was destined to make a spectacular, if brief, reappearance on the Western Front during October of the following year.

Two other demonstrations of inadequate enemy fighter skill were provided by the experiences of Lieutenant T.F. Williams of Woodstock, Ont., a thirty-year-old novice who joined 45 Squadron on 24 September. Exactly one month later he was flying in a five-machine offensive patrol when he was caught out of position by a patrol of seven Albatros scouts which promptly attacked him. 'Williams quickly saw that the leader was well ahead of the other six enemy machines and he made a swift turn and placed his Camel behind the Albatros leader and in front of the six behind him who dared not fire because of the risk of hitting their own leader. Williams fired about 150 rounds into the enemy leader's machine, aiming around the cockpit; it went down in a slow spin and crashed at Coucou ... As soon as his opponent went down Williams quickly nipped back under Frew's formation at full throttle.'<sup>119</sup> Two weeks later he had another narrow escape when isolated by eleven scouts east of Houthuist. 'According to the record he escaped by spinning down from 12,000 to 2,000 feet and again to 200 feet, when he managed to escape and cross the lines unscathed. Some spin!'<sup>120</sup>

Another Canadian to experience an exciting day on 5 November was Flight Sub-Lieutenant W.A. Curtis of Toronto. His opponents proved to be rather more skilful when, leading a patrol of five Camels over the German side of the lines, he engaged a formation of eight enemy machines.

Bullets went through my main spar on the lower starboard wing and before I knew it I was in a steep dive but upside down, hanging onto the cowling openings beside the guns with both hands and my toes pressed up against the toe straps on my rudder bar for all I was worth. My seat belt had too much elasticity and did not hold me fast.

German machine guns were rat-tat-tatting away as the different pilots took turns shooting at me.

I went from 12,000 to 3,000 feet in this position, swearing at the Huns for shooting at me when I was obviously going to crash in a few minutes. I was panicky. At about 3,000 feet I went into heavy cloud, collected my panicked brains, reached up into the cockpit with one hand, caught the spade grip on the joy stick, pressed the blip switch cutting the engine and slowly pulled back on the stick, coming out of the cloud right side up with no German pilots around.

I was over the German lines, did not want to be a prisoner, did not know whether the wing would stay together if I put the engine on or not but decided it was the only thing to do if I did not want to crash behind the lines and be a prisoner.

I put the engine on slowly, the wing held together and with no one shooting at me from the air I stooped back home, a very thankful and less cocky fighter pilot.<sup>121</sup>

\* Canadians, besides Barker (WIA 7 Aug. 1917, 27 Oct. 1918), serving in 28 Squadron at this time included J.N. Blacklock of Elora, Ont., H.B. Hudson of Victoria, G.S. McKee of Vancouver, and L.P. Watt of Westmount, Que.

By the end of October the British fighter pilots were generally justified in feeling a little cocky. The air war was still far from won, but the RFC was now clearly establishing a degree of overall superiority in the middle and high altitude fighting which – theoretically, at least – reflected command of the air. Even though British fighter formations were often smaller than German ones, their pilots and aircraft were at least as good and their tactical leadership frequently better. The policy which packed the Richthofen Circus with the best fighter pilots, and made it such a notable propaganda success, had a serious weakness. Though the Circus might enjoy momentary superiority whenever it operated, other German fighter formations had been drained of their fighting leaders to create this élite unit, and were therefore relatively weak. On the other hand, although the RFC (and RNAS) had their élite squadrons too, they arose more or less spontaneously and other squadrons were not deprived of their own leaders to maintain the formers' reputations.

Consequently, the British were gaining an edge over the long haul. The superiority established during the late summer and fall of 1917 was to continue and increase, with only very brief breaks, until the end of the war. It was perhaps unfortunate that better use was not always made of this superiority to give more protection to their own corps and ground support machines, or to monitor the enemy's ground support activities more closely, but for two years the air staff had been completely dedicated to the development of an extreme offensive spirit and it could not be expected to modify that concept just when it had begun to justify itself.

By the time the Canadian Corps was brought up from the south to take Passchendaele, all but nine of the sixty British and dominion divisions on the Western Front had been engaged in the Flanders offensive. The Canadians launched their attack on 26 October in a steady downpour of rain. On the right flank they captured their objectives, but then crept back to hold just short of their assigned line. On the left, where the ground was even muddier and more torn up, the attack stalled halfway to the objective. Nevertheless, by nightfall, the troops were firmly established on drier, higher ground southwest and west of the village, at a cost of 1500 casualties.<sup>122</sup>

The weather, as usual, was not suited to the proper operation of the air arm. Air fighting was virtually impossible and the various kinds of low-level work were very difficult, but the airmen did their best, most of the effort falling on the corps machines whose slower speeds and two-man crews permitted them to get a better idea of what was going on in the murk below. Second Lieutenant J.E. Mott of Waterford, Ont., observing from an RE8 on contact patrol, found that he could get no reply to his repeated signals calling for flares, so his pilot dropped the machine to 200 feet in order to identify the men below. 'Their machine was shot down by rifle fire, but the report was handed in at Divisional Headquarters,' while three other RE8s of 9 Squadron, including one piloted by Lieutenant A.G. Peace of Toronto, with Lieutenant G.D. Gillie of Cornwall, Ont., as his observer and another flown by Captain W.F. Anderson of Toronto, fired a total of 1700 rounds at groups of men and various other targets 'with good effect ... from altitudes varying between 150 and 800 feet.'<sup>123</sup>

On the 27th the weather improved and although there was comparative quiet on the ground there was increased activity in the air. British offensive patrols claimed

nine enemy machines destroyed in the course of a great number of combats, including victories by W.G. Barker and Naval Ten's Flight Sub-Lieutenants Curtis and K.V. Stratton of Aylmer, Ont. The corps squadrons had a good day, claiming 116 German batteries engaged along the whole front, and over 6000 rounds were fired at various targets on ground support sorties, the great majority of them by pilots of 11 Brigade. If they were not always very well placed in terms of target selection, at least they were delivered with *panache*. Two Spads of 19 Squadron, one of them flown by Lieutenant J.D. De Pencier of Vancouver,\* seeing troops in the main street of Moorslede, 'flew down it practically between the houses at a height not greater than fifty feet,' firing as they went.<sup>124</sup>

The Canadians renewed their assault on 30 October, in cold windy weather which brought rain in the afternoon. This time they carried their objectives and successfully repelled a series of counter-attacks in the afternoon and all day on the 31st. There was very little fighter activity on the 30th but, during the following day, while a low mist hampered artillery co-operation work, there was a great increase in air combats as the German fighter elements chose to deliver one of their periodic challenges to British superiority. Three hundred and eighty-nine flights were made by RFC fighter aircraft, in the course of which seven enemy machines were claimed destroyed and sixteen driven down out of control. Three of them fell far behind their own lines to the guns of 11 Squadron's Andrew McKeever—who had been awarded a Bar to his MC on 27 October—and his observer.<sup>125</sup> The RFC's offensive patrolling, however, failed to interfere with the German day bombers, accompanied by a close escort of fighters. The 14th Battalion, CEF, encamped outside Ypres, 'witnessed aerial activity on a scale which dwarfed anything in their previous experience ... Over Camp 'A' sailed one magnificent squadron of fighting planes, escorting heavily-laden Gotha bombers, which contemptuously flung down some fifteen bombs and then proceeded towards Ypres.' The RFC also carried out limited day bombing, and reported some success in their night bombing of German rail centres, industrial targets, aerodromes, and rest areas.<sup>126</sup>

The Canadians were now firmly established on the slightly higher ground immediately southwest of Passchendaele and astride the spur which jutted westwards from the main ridge just north of the village.<sup>127</sup> However, the village itself and the remaining high ground to the north were still in enemy hands and Sir Arthur Currie, the Commander of the Canadian Corps, planned to take them in two steps. On 6 November he attacked again with the intention of securing the village.

November weather in northwest Europe is usually wet and windy. The sixth of November 1917 was no exception. During the day only a couple of air combats took place, artillery observation was severely restricted by rain and mist, and air deployment was confined mainly to the work of ground support machines under conditions which made their work of little benefit, despite the expenditure of some 11,000 rounds, nearly half of them by one squadron. Since the pilots were sent out

\* De Pencier was wounded on 22 November 1917, and again on 5 December 1917. Other Canadians flying with 19 Squadron on 27 October included A. Des B. Carter of Point de Bute, NB (POW 19 May 1918), G.A. Cockburn of Toronto (KIA 8 Nov. 1917), and G.W. Taylor of Gagetown, NB (WIA 13 March 1918).

on roving missions with neither definite courses nor specific targets, many of them quickly became lost. Some came down well inside the German lines, one patrol from 3 Squadron landing its four Sopwith Camels near Namur, a hundred miles in front of the Canadian infantrymen they were supposed to be supporting. The RFC reported twelve officers missing at the end of the day as a result of these ill-directed activities.<sup>128</sup>

The British efforts contrasted poorly with those of the enemy, whose *Schlachtstaffeln* were employed according to a well-developed tactical doctrine. 'During the day, enemy aeroplanes in groups from 3 to 8 and 9 were continuously overhead and kept up machine-gun fire but our casualties from this were slight as our men kept out of sight,' recorded the 1st Battalion, CEF, on the left flank of the attack. The 31st Battalion, in the centre, were not so lucky: 'enemy air craft, flying low, dropped bombs upon, or machine-gunned, every group of the attacking Canadian forces which they were successful in sighting.' The battalion suffered a number of casualties as a result.<sup>129</sup> However, the poor visibility did save them from a certain amount of shelling and strafing during the consolidation period. 'At Jumping Off point men were permitted to leave their Overcoats and the reserve platoons were to look after these when the situation was cleared up. Low flying a/c spotted these coats and, mistaking them for troops, directed a heavy fire on them during the morning with the result that our men in Passchendaele had less shell fire to contend with whilst consolidating.'<sup>130</sup> At the end of the day the Canadians still held the village but there were 2250 fewer of them than there had been at dawn, exchanged for approximately one thousand square yards of Flanders mud.<sup>131</sup>

The final phase of Third Ypres came on 10 November, when the Canadian Corps attacked the remaining high ground to the north of Passchendaele, which could give them complete observation over the German positions to the north-east. It rained heavily all day and 'very little work was accomplished.' The attack was successful, both the cost and the results being approximately half those incurred four days earlier, in terms of casualties and square yards of ground gained.<sup>132</sup>

British losses in the Ypres Salient between 21 July and 10 November totalled some 260,000, while the enemy had lost about 60,000 fewer men.\* Exact figures for aircrew casualties are difficult to calculate on both sides but it seems likely that about seven to eight hundred RFC officers were killed, wounded, or taken prisoner during the battle,<sup>133</sup> while German air force casualties are likely to have been rather lighter, since so much of the air fighting took place over the German lines. But the air war was now part of a vast battle of attrition, and German losses, though probably numerically smaller, were more serious than those of the RFC. In material terms they were far less able to afford the casualties than the British, whose own resources were greater and who knew that the Americans were massing behind them. Psychologically the effect of a successful offensive, however meagre the actual gains, stimulated morale amongst the fighting men more than a successful defence.

\* See G.W.L. Nicholson, *Canadian Expeditionary Force, 1914-1919* (Official History of the Canadian Army in the First World War; Ottawa 1964), 329, for a critical assessment of the figures produced by various authorities.

When the Third Battle of Ypres petered out on Passchendaele Ridge, preparations were already well under way for the BEF's final offensive of 1917. On 20 October final approval had been granted by GHQ for the launching, at Cambrai on the Third Army front, of the first battle in history to be founded on the internal combustion engine.<sup>134</sup> The tactics were to be based on the employment of tanks *en masse* spearheading a surprise attack, and the major supporting role was allotted to low-flying, ground support aircraft.

For the tanks both time and place were well chosen, the ground being comparatively firm and its surface still largely intact, while the restricted visibility to be expected of the mid-November weather would protect the machines to some extent from anti-tank gun fire. For aircraft, in contrast, the outlook was not so good, since the possibilities of rain, wind, and fog seriously threatened their role. Nevertheless, the air planning was carried out with a care and thoroughness not previously seen in the RFC, at least as far as ground attack was concerned. The designated 3 Brigade was quietly reinforced until it mustered 125 corps machines, 134 single-seater fighters, eighteen Bristol Fighters, and twelve DH4 bombers, and arrangements were made for it to draw additional fighting and bombing squadrons from I Brigade and 9 (HQ) Wing on demand. Against this force the enemy could, at the opening of the battle, count on only seventy-eight machines, of which twelve were fighters. III Brigade alone outnumbered the opposing units of the German air force by about four to one, with a superiority of ten to one in fighters.<sup>135</sup>

Steps were taken to give the pilots allocated to the ground support role some training in their work. No 3 Squadron, for example, put in eleven hours 'mainly [in] low flying work' on 15 November and the next day practised 'low bomb dropping, and low flying formations throughout the day. Everyone worked with a will to become really proficient in as short a time as possible.' A.G. Lee has recounted that 46 Squadron, caught in the middle of exchanging their Sopwith Pups for Camels, fitted the remaining Pups with bomb racks and practised low-level bombing and cross-country flying in the days immediately before the attack although low-level flights were 'normally ... officially frowned on.' After a week of this training, Lieutenant-Colonel G.F. Pretymann, commanding 13 (Army) Wing of III Brigade, forbade his squadron commanders to send any 'insufficiently trained' pilots over the lines during the attack, while stressing that 'we must have as many machines as possible on ground target work.'<sup>136</sup>

The operation order produced by III Brigade was much more detailed and specific about ground support than those issued previously. The SE5s were reserved for offensive patrols and balloon busting and the DH5s and Sopwith Camels were to concentrate on low-flying activities. They were to work in flights if the weather was good enough and if not, then in pairs. The types of targets they were to attack were stipulated as well as the areas of front where they should concentrate at given times. As at Hill 70, an advanced landing ground was set up with four Camels or DH5s 'always ready ... to attack low-flying E.A. ... Arrangements will be made for the A.A. look-out post to give warning of such E.A. direct to the advanced landing-ground by priority telephone.'<sup>137</sup>

Unfortunately, 20 November dawned with a heavy fog blanketing the ground that made all flying difficult and low-flying exceptionally so. Fighter attacks on

enemy airfields yielded no significant results. The one German flight on the front was surprised on the ground, preparing to attempt a take-off in the deplorable weather after the CO had been threatened with a court martial if he did not. When three Camels of 3 Squadron suddenly appeared, four of the twelve Germans took off as the Sopwiths bombed and strafed the field without effect. One of the Camels, piloted by Second Lieutenant G.W. Hall of Shelbourne, Ont., was shot down.\* The other Sopwiths collided with trees while hugging the land contours on their way back home, all three pilots being killed. Little more was achieved in the other aerodrome raids: two pilots became disoriented and landed behind the German lines and one was shot down by ground fire.<sup>139</sup>

With no preliminary artillery barrage the ground attack began at 0610 hrs. Initially, the thick mist hid the 380 British tanks until they were almost upon the enemy and the German front-line defences quickly crumbled before this mechanized onslaught. By 1030 hrs the infantry and cavalry in immediate support of the breakthrough were advancing towards Marcoing through the open country beyond Ribécourt and only on the northern flank had the tanks been seriously challenged.<sup>139</sup>

The low-flying squadrons had been given as their primary objectives three groups of artillery batteries, two on the southern flank at Lateau and Vaucelles Woods, and one on the northern flank along Flesquières Ridge. The latter was assigned to 64 Squadron† and, at 0700 hrs, four DH5s thoroughly bombed and strafed the emplacements there. But the guns, protected by their pits, had not been seriously damaged and, although one of the attacking pilots reported the positions deserted forty-five minutes later, very little harm had been done by the initial attack. Unfortunately, perhaps as a result of the report that the positions were deserted, no further special attention was directed towards the Flesquières area during the day by low-flying aircraft.<sup>140</sup> The Germans, however, had simply pulled the guns from their pits and deployed them in the open along the reverse slope of the ridge. From here they wreaked considerable destruction on the British armour.§

The weather deteriorated still further so that after 0900 hrs flying became 'absolutely impossible' for a while.<sup>141</sup> Towards noon conditions improved very slightly

\* Hall, together with the only other Canadian known to be serving in 3 Squadron at this time, F.H. Stephens of Uxbridge, Ont., was detailed to attack Carnières aerodrome, but the patrol seems to have lost its way in the fog. Stephens, who was to be killed three days later, made a forced landing at Aizecourt le Bas behind allied lines. No 3 Squadron Record Book and War Diary, Air 1/166/15/142/19

† Canadians flying in 64 Squadron, which had only arrived in France on 14 October (Jones, *War in the Air*, IV, 235n), included J.P. McRae of Ottawa (POW 20 Nov. 1917), H.G. Ross of Montreal, E.R. Tempest of Perdue, Sask., and V.W. Thompson of Ottawa.

§ It is difficult not to agree with Sir John Slessor that 'It is a little strange to find the [British] Official History saying "even had the fighting pilots known of it and realized its importance, it would be idle to claim that their attacks could have been made powerful enough to wipe out the German resistance" and going on to suggest that artillery in the open is not a particularly suitable target for assault action.' *Air Power and Armies* (London 1936), 109. Nor can one altogether accept the British Air Historian's thesis that 'The guns could be more easily dealt with in their known pits ...' Jones, *War in the Air*, IV, 236

again, so that the ground support squadrons could continue to harass the enemy. Both Captain Edmund Tempest and Lieutenant J.P. McRae of Ottawa were prominent amongst the pilots of 64 Squadron engaged in this work. 'Capt. E.R. Tempest ... obtained direct hits on one or two Gun emplacements near MARQUION. He then circled about for 20 minutes until he had expended his ammunition at the Gun teams and on dug-outs. He returned to his Aerodrome and filled up again with ammunition and bombs, one of which he dropped 2 yards from a house outside which troops were halted. He also engaged troops and transport on the road ... Lieut. J.P. McRae ... dropped bombs on and engaged hostile batteries from 100 feet.'<sup>142</sup>

By nightfall the Third Army had punched a hole six miles wide and three to four miles deep in the German defences and inflicted heavy losses upon the enemy, while incurring only light casualties, although a large number of tanks had been destroyed. However, the attack had gradually lost momentum throughout the day,\* and it was becoming apparent that there was little hope of achieving Haig's aim of clearing the whole great quadrilateral bounded by the old enemy front line, the St Quentin canal, the Sensée River, and the Canal du Nord.<sup>143</sup> Yet despite the losses of tanks and aircraft it was decided to resume the assault on the following morning, because Bourslon Ridge, just north of Flesquières, was still held by the enemy and the higher ground there dominated all the Third Army's new-won gains.

The weather was no better on the 21st. The mist was possibly a little thinner but rain and low clouds persisted and visibility was 'very poor.' III Brigade could muster 229 serviceable machines in both wings but, in any case, there was little that aircraft could do. Nine successful reconnaissances were flown, and four successful contact patrols. One solitary hostile battery was reported by an artillery observation machine. No enemy air activity at all was recorded by the brigade, although British ground forces complained that German low-flying machines were giving them 'considerable trouble' at Bourslon, and the German fighter commander found that 'as aerial combat was still impossible, we carried out the tasks normally done by infantry pilots; our own front lines were reported constantly, and ground targets – especially tanks – were fired upon.' At the end of the second day Bourslon Ridge still held out and German reinforcements were now arriving on the scene. The limits of the British advance were untenable in the long run unless the ridge could be taken. The alternative was to relinquish some territory at the point of greatest advance and await the almost inevitable German counter-attack on favourable ground. Sir Douglas Haig decided to continue the attack.<sup>144</sup>

The British troops were rested on 22 November, when the only significant ground action consisted of a limited enemy counter-attack which recovered Fontaine-Notre-Dame and strengthened their position in Bourslon Wood. In the

\* '... the original plan for a large scale raid ... had been changed to a major offensive with far-reaching aims; and virtually no reserves had been assembled to exploit the success achieved by the initial surprise.' Stephen Roskill, *Hankey: Man of Secrets, 1: 1877-1918* (London 1970), 461. For a more detailed analysis see B.H. Liddell Hart, *The Tanks: the History of the Royal Tank Regiment and its Predecessors, Heavy Branch Machine-Gun Corps, Tanks Corps and Royal Tank Corps, 1914-1945, 1: 1914-1939* (London 1959), 129-34.

air the prolonged poor weather still hampered the development of any worthwhile air support, although twenty-seven combats were reported with two enemy machines destroyed and one forced down inside the British lines. III Brigade, however, lost nine single-seater pilots killed, wounded or missing.

During the low-level operations it is not clear how many of these officers were shot down by ground fire, flew their machines into trees or hillsides, or were the victims of German fighter patrols, but the increase in the number of air combats reported is significant. The Richthofen *Geschwader* was moved hurriedly south from Ypres and, although their leader did not get his first victim on the Cambrai front until 23 November, some of his pilots may well have been in the air by the afternoon of the 22nd. One Canadian, at least, came to realize very clearly that there were certainly rather more German fighters in the vicinity. When 84 Squadron's Second Lieutenant P.J. Moloney of Peterborough, Ont., became separated from his patrol, he found himself attacked by six enemy machines. His flying wires, right-hand aileron wires, radiator, and engine were all shot through in a ten-minute fight and he was wounded in the hip, but he managed to drive one of his attackers into a spin, apparently out of control. When the German machines finally made off, Moloney found that his compass had also been hit but he succeeded in making a forced landing inside the British lines.<sup>145</sup>

On the 23rd when the attack on Bourlon Wood was resumed, the British tanks could no longer rely on surprise. The enemy had brought up anti-aircraft guns mounted on trucks and used them most effectively in an anti-tank role. Apparently the British pilots failed to locate them. Since the weather was noticeably better, although visibility was still limited, one hundred and twenty 25-lb bombs were dropped and 14,600 rounds fired by the army wing against various ground targets. Tempest was again singled out for mention, together with Lieutenant V.W. Thompson of Ottawa and 46 Squadron's Second Lieutenant R.L.M. Ferrie of Hamilton, Ont.\* However, III Brigade had sixteen aircrew wounded or missing during the day, and were only able to claim three enemy machines 'brought down' and one 'out of control.' One of those destroyed fell to the guns of an SE5a from 56 Squadron flown by Lieutenant B.W. Harmon of Stanley, NB.<sup>146</sup>

By the end of this third day of fighting, III Brigade had lost, from one cause or another, 30 per cent of the aircraft initially available, 'but the verbal testimony of the tank personnel and of the infantry was that the aeroplane pilots often made advance possible when the attacking troops would otherwise have been pinned to their ground.'<sup>147</sup> That was all very well when the troops were not getting pinned, but it was not a casualty rate acceptable now that the Third Army seemed unable to make any further significant advances. For the next few days the bitter struggle continued, as Bourlon and Fontaine-Notre-Dame were taken and lost again to determined German counter-attacks.

\* Ferrie was killed on 3 January 1918. Other Canadians serving in 46 Squadron on 23 November included A.L. Clark of Toronto (POW 13 Dec. 1917) and R.K. McConnell of Victoria. T.L. Atkinson of Renfrew, Ont., had been taken prisoner the previous day, and on the 23rd E.G. McLeod of Hunter's River, PEI, died of wounds received the day before. In three days' time a Canadian novice destined to become one of the last and greatest of the First World War aces would join the squadron: D.R. MacLaren of Vancouver.

During this time the close support squadrons were retained on expensive and now mostly futile attacks against the enemy front-line positions. Meanwhile, German reserves were pouring into the area, reconnaissance aircraft reporting 'a congestion of trains in Douai station – much movement south from that rail-head – columns of troops and transport marching on Cambrai from Douai – other columns moving south on the Lens-Douai road.' These concentrations were largely unhindered from the air. The high-level day bombers detailed to attack the targets had difficulty in finding them, and their bombing was ineffective.<sup>148</sup> Better results probably could have been obtained by diverting close support squadrons to these vital targets.

The British position was becoming more and more dangerous. However, GHQ, apparently quite confident that any counter-attacks would be only local ones, stopped the special bombing operations associated with the Cambrai offensive. On 26 November the squadrons of I Brigade, which had been working in the Cambrai sector, were ordered to revert to their previous operational programmes. On 28 and 29 November 9 Wing's two day-bombing squadrons reverted to general strategic targets, and were therefore attacking Courtrai and Roulers stations as Third Army observers were reporting 'much railway movements towards Cambrai from the north-west (Douai) and north-east (Denain), towards Busigny from the north-east (le Cateau), and further south beyond Villiers Outreaux.'<sup>149</sup>

Air reconnaissance was still greatly hampered by bad weather, but both GHQ and Third Army felt that any counter-attack which did develop would be launched against the northern flank, around Bournonville. However, on 30 November the Germans focussed the weight of a major assault against the southern flank, between Masnières and Vendhuile, catching the British badly off balance.\* General von der Marwitz, the German commander, intended to pinch off the salient by a dual attack, his right wing operating from Bournonville southwards and his left from Honnecourt westwards. The northern attack was stopped in its tracks. In the south, however, the German infantry, strongly supported by specially trained and equipped ground-support squadrons flying in tight formations, quickly burst through the front.<sup>150</sup>

The day was fine, with low clouds but 'fair' visibility, and there was soon more aerial activity developing than had been seen since the British Third Army had crossed its start lines ten days earlier. III Brigade could muster only 230 serviceable aircraft now, ninety-nine of them corps machines, but around Bournonville the sky was 'black with German and British machines.' Fighter patrols of both sides were busy as sixty-one combats were reported, twenty-three of them being claimed as 'decisive.' The most spectacular of them involved a Bristol Fighter of 11 Squadron, flown by Andrew McKeever. He and his observer were on a solo reconnaissance flight over Cambrai when they encountered an enemy patrol of two two-seaters and seven fighters which appeared suddenly out of the mist on their right. McKeever unhesitatingly attacked and shot down one of the enemy

\* 'The three tank brigades ... move to winter quarters ... had already begun, and neither officers nor men suspected that they would be called upon to fight again before the spring.' *Military Operations: France and Belgium, 1917*, III, 170

with ten rounds at a range he estimated to be only fifteen yards. In the dogfight that followed his observer accounted for two more. A fourth enemy aircraft, closing on them from the rear, made the mistake of overshooting them and was promptly knocked down by McKeever. At this stage his observer's gun jammed so the Canadian put his Brisfit into a dive to within twenty feet of the ground. The remaining two enemy machines thereupon abandoned the chase and McKeever tore back over the lines at ground level. The action brought the total number of victories claimed by McKeever and his observers to thirty in his first half year at the front and won him a DSO to add to the MC and Bar already awarded.<sup>151</sup>

Not every corps pilot was lucky enough to be flying a Bristol, however. Lieutenant A.M. Kinnear of Quebec City, flying an RE8 of 8 Squadron, found himself in real trouble when 'seven [enemy machines] got after me, wounded my observer and shot my [elevator] controls away. How I got away I do not know, but I was lucky – the machine had over 60 holes in it.' The next day was no better, but this time the danger came from ground fire: 'I had 110 holes in the bus and one in my head ... I had to come down low to ascertain certain things and "umpteen" machine guns started to shoot the bus to pieces. I was hit on the head and faded away, and when I came to my observer was pushing a flask down my throat and the bus was diving for the earth. I had enough sense to pull her up and managed to steer west. When I crossed our lines the engine died, so I planted her in a field and once more passed away.'<sup>152</sup> Apparently Kinnear's head was only grazed by the bullet, for 'in a couple of days I buzzed back to the squadron. So far I have had five machines shot to pieces – but what of it – the Government pays for them.' Kinnear's nerveless flying was rewarded with an MC and before the end of the war he had one of the new Air Force Crosses as well.<sup>153</sup>

Kinnear's was one of the few combats on 1 December, for the weather closed in again and 'little flying was done' as the Germans pressed their advantage on the ground. III Brigade managed to drop only forty-eight 25-lb bombs and fire over 2500 rounds against ground targets as compared with 111 bombs and 15,000 rounds expended the previous day, and reported only five combats. On 2 and 3 December conditions gradually improved, but low-level work was of a rather perfunctory nature on both sides.<sup>154</sup> The German ground attack was now petering out as the British carried out a fighting withdrawal from the salient.

Part of this withdrawal was conducted in a snow-storm and the final onset of winter brought both ground and air campaigns to a stop on the Western Front. Sporadic artillery duels continued, with the guns ranged by corps machines when the weather permitted,\* and on occasion the British bombers and reconnaissance

\* Personnel turnovers, squadron and regimental transfers, and all the depersonalization inevitable as the scale of battle continued to increase, had brought a great need for more standardization in artillery-air co-operation. From 11 July to 11 November 1917, for example, there were 691 shoots ranged successfully from the air in Fourth Army's area, and 256 failures of which 100 were classed as 'avoidable.' Paper on standardization of aeroplane-artillery cooperation, 16 Aug. 1917, paper on aeroplane-artillery cooperation in Fourth Army, [November 1917], Air 1/918/204/5/879. Steps were now being taken to correct this, however, as a result of a study prepared during August (see Jones, *War in the Air*, IV, 214–19), and the winter lull provided the necessary training opportunity.

machines flew their missions far over the enemy lines. Above them all the high altitude fighting patrols still struggled desultorily for that intangible will-o'-the-wisp, 'command of the air.' But winter was a quiet interlude during which new pilots had a reasonable chance to learn their trade, relieved only by the exploits of a few pugnacious individuals like eighteen-year-old Second Lieutenant Alan Arnett McLeod of Stonewall, Man., who had joined 2 Squadron\* on 29 November.

On 18 December McLeod was flying an old Armstrong-Whitworth FK8 on artillery observation duty near Hulluch when a nearby Albatros Scout mistakenly dived to strafe the British line. 'We in turn dived on E.A. and drove it off by the fire of pilot and observer's guns,' recorded McLeod in his combat report. The next day, while engaged on the same mission at almost the same time and place, eight Albatrosses were there to attack them and the observer could fire only three rounds before his gun jammed. McLeod, however, dived on one of the enemy machines beneath him, fired into it, and watched it spin out of sight before fighting his way back over the British lines.<sup>155</sup>

With not enough photographic or artillery co-operation flights to keep them busy, some of the corps squadrons were turned to night bombing. A British observer with 16 Squadron has recorded the circumstances of his first operation of that kind, flown on a 'dark and misty night' at the turn of the year.

A hair on the head is little, a hair in the soup is much; the hairs breadth by which our starboard wing-tip missed the dimly-seen squadron offices as we left the ground with engine all out was a great deal. Peering down the narrow funnel of relative visibility directly beneath us which was all that the mist-banks allowed us to see, we dumped our bombs when we thought we recognized an enemy land mark and turned with quaking hearts for home and a dreaded landing. Fumbling through the fog, we at last hit on the flares and Compton throttled down to land ... I thought we were going to overshoot the aerodrome, which we could scarcely see, and hit that squadron office ... so wrong was I that just then we hit the ground and overturned ...<sup>156</sup>

Thus General Trenchard ensured that the air weapon did not rust in his hand.

In London Colonel Maurice Hankey, the secretary of the Imperial War Cabinet and also of that same War Policy Committee which, in July, had vowed to stop Haig's offensive if it degenerated into a drawn-out, indecisive battle, was pessimistically writing in his private diary that now 'the whole position is very different. Russia practically out of the war; Italy very much under the weather after [her] defeat [at Caporetto]; France unreliable; the U.S.A. not nearly ready; our own man-power much exhausted by the senseless hammerings of the last three years.' Hankey might have gone on to note that, because of the heavy casualties which it had incurred, the RFC had been unable to increase its overall fighting strength on

\* Other Canadians serving in 2 Squadron during December 1917 included C.A. Burpee of Edmonton, J.B.L. Heney of Ottawa (KIA 9 March 1918), F.C. Higgins of Sherbrooke, Que., W.H. Kilby of Vancouver, H.I. Pole of Winnipeg (WIA 9 May 1918), H.L. Polson of Toronto, L.C. Spence of Ottawa (POW 25 May 1918), D.S. Thompson of Canfield, Ont., and W.H.M. Wardrope of Hamilton (WIA 27 March 1918).

the Western Front by more than one squadron – from 51 to 52 – over the past six months. The Canadians, for example, forming a major source of aircrew manpower,\* with about 240 flyers on the Western Front in July, had been unable to do more than maintain their strength. They suffered some 220 casualties in six months, close to 100 per cent turnover, to end the year with approximately the same total that they had mustered at the end of June.<sup>157</sup>

The German air force had undoubtedly been effective in 1917. Its large proportion of good single-seater aircraft, its tactical innovations, and the skill of its experienced pilots made it seem larger than it actually was. Yet it was unable to maintain the superiority it had enjoyed at the beginning of the year. Despite the disproportionate losses inflicted by their smaller forces, the Germans lacked the resources to contain the RFC and limit the effect of the numerical and technological advantages it had begun to establish. In Britain and Canada training schools were full and large numbers of better aircraft, especially fighters, were coming into service. The Germans could not keep pace.<sup>†158</sup>

\* R.W. MacLennon of Toronto (KIA 23 Dec. 1917), who joined 60 Squadron on 25 November, wrote home three days later to assure his parents that 'There are about twenty-four officers in the squadron, and more than half of these are Canadians, so I feel quite at home.' Quoted in A.J.L. Scott, *Sixty Squadron R.A.F.: a History of the Squadron from Its Formation* (London 1920), 81. Canadians known to have been on the strength of 60 Squadron at that time included J.L. Armstrong of Keremeos, BC, A. Carter of Calgary (KIA 25 June 1918), J.B. Crompton and W.J.A. Duncan, both of Toronto, W.J. Rutherford of Westmount, Que., and O. Thamer of Kitchener, Ont.

† With its much smaller intake the RNAS found it difficult to replace its battle casualties. It could only maintain its fighter commitment on the Western Front by disbanding 3 (Naval) Wing, using its thirty-five airmen as replacements, and by reducing squadron establishments from twenty to an eventual fifteen.

## Italy and Macedonia, 1917-18

Units of the RFC or RAF were found wherever the British Army went into action during the First World War. Inevitably, therefore, Canadians flew in every theatre. Macedonia and Italy were two of the most important allied 'sideshows.'<sup>\*</sup> Only about twenty Canadians flew with the RFC and the RAF during the Macedonian campaign (several more serving with the RNAS during its periodic involvements there), but in Italy more Canadian airmen participated than on any battlefield save France. In many ways the two groups had similar experiences. In both Macedonia and Italy the air arm was serving relatively small British forces, yet was itself under strength. As a result airmen were called upon to perform a wide range of duties and could not specialize to the same degree as in France. For much of the time the armies they worked with remained static, but the airmen always had to be offensive-minded in order to carry out their duties. In both theatres the air service had to come to grips with the many problems inherent in operating over mountainous terrain.

There were strong contrasts as well. From the start the air contingent in Italy was equipped with excellent aircraft and could count upon resupply and reinforcement from France and England. Its units all had experienced the air war on the Western Front, coming directly to Italy from there. Of the two squadrons initially sent to Macedonia, on the other hand, one had seen limited action in the Middle East theatre against the Senussi, the Sultan of Darfur, and for some weeks against the Turks, while the other had been a training unit in England. The aircraft of both squadrons were obsolescent, including at least two types that had been rejected for service in France. Supply was handled by the RFC's Middle East Brigade, and the Macedonian front was low on its pecking order; not until the last year of the war were first-class aircraft made available. Whereas in Italy 14 Wing took command of the air almost from the start against its Austrian opponents, 16 Wing in Macedonia had a hard struggle against a small but first-rate German air service.

Allied intervention in Macedonia grew out of the impact of the war upon the tangled web of Balkan politics. The immediate cause of the world struggle had been the collision between Serbian nationalism and Hapsburg imperialism, but the Sarajevo assassination had a regional as well as a profoundly international signi-

<sup>\*</sup> See also Appendix B.

ficance. There had been two Balkan wars immediately before 1914, and the outbreak of the First World War, in Balkan terms, was an opportunity for the vanquished to become victors, for the unsatisfied to realize territorial ambitions.

Serbia, a beneficiary of these earlier wars, was initially the *Entente's* only ally in the area; Turkey, a loser by them, declared for the Central Powers in November 1914. In a supreme national effort the Serbians threw out an invading Austrian force when defeat seemed certain, and then held their own. But Germany, intent upon a direct and uninterrupted rail link with Constantinople, persuaded the Bulgars, another of the losers in 1913, to enter the war in exchange for Macedonia and the Vardar corridor to the Aegean. On 22 September 1915 Tsar Ferdinand of Bulgaria ordered general mobilization, and on 6 October the Serbs were assailed by German, Austrian, and Bulgar forces. Serbia appealed to Greece, bound to her by a convention of mutual assistance in case of Bulgarian attack, and to the French and British governments. Greece, divided between a king tied by blood and marriage to the Hohenzollerns and a premier inclined toward the *Entente*, remained neutral. Premier Venizelos was unable to do more than authorize the passage through Salonika of a French and a British division, both evacuated from the Suvla positions at Gallipoli, before he was dismissed from office by King Constantine. On 5 October the first contingent of what ultimately became 90,000 French and 60,000 British troops began to disembark, to entrench themselves around Salonika and in due course to take up positions along the Greek frontier. The Bulgars, meanwhile, occupied the high ground and mountain passes along the Serbian and their own southern borders facing the Allies and the still-neutral Greeks.

By the summer of 1916 the allied 'Army of the Orient,' commanded by *Général* Maurice Sarrail, totalled 300,000 men and included not only the French and British but also the remains of the Serbian army and contingents from Russia and Italy. The Allies had scant respect for Greek neutrality, but a great deal for the wall of mountains that harboured the Bulgarians, so that the Germans referred to the Salonika theatre as 'the greatest Allied internment camp.' The Serbs occupied the Monastir sector on the left, the French held the centre, and the British were consigned to the right, where their ninety-mile front began at the sea, ran north up the Struma Valley, then west along the southern shore of Lake Doiran to the Vardar River. On these lines the British were fated to remain until the last days of the war, despite a number of bloody but unavailing attempts to crack the Bulgar defences.<sup>1</sup>

Initially the British forces were supported in the air by the French and by RNAS units from the Aegean. In July 1916 17 Squadron was sent from Suez and in September was joined by 47 Squadron from England. Both these units were corps squadrons, 47 working with XII Corps on the Doiran front and 17 with XVI Corps on the Struma front, but their BE2s, BE12s, and Armstrong-Whitworths had to serve as fighters as well. As time passed the squadrons acquired a few Vickers Bullets, DH2s, and Bristol Scouts, but none of these aircraft was a match for German Halberstadt fighters. As Sir David Henderson observed at an October meeting of the Air Board, the RFC in Macedonia was 'quite inadequate to cope with the normal requirements of the Army there.'<sup>2</sup>

Nevertheless, the RFC's airmen did the best they could. Artillery observation work was hazardous and frustrating, not just because of the Halberstadts but also

because of the peculiarities of the terrain. The Bulgars had located most of their batteries in deep ravines in the plentiful natural camouflage of the rocks and low bushes which covered the mountain slopes. On the heights, however, they posted anti-aircraft guns and machine-gun nests. On the Doiran front, dominated by the massive hills known as the Grand Couronné, the Petit Couronné, and 'P' Ridge, it was not unusual for observation machines to come under ground fire from above. The gusty winds and treacherous air currents over the mountains made flying difficult, the winter cold was as extreme as the summer's heat, and the sector was malarial. The Bulgars, however, perched in their lofty defences, could survey every detail of the British lines and had no need of aerial observation.<sup>3</sup>

Because activity on the ground was infrequent, air operations tended to settle into the routine of reconnaissance and artillery observation on a daily basis, broken occasionally by bombing raids and brief individual combats. During these early months Lieutenant L.R. Andrews of Toronto and Captain George M. Croil\* carried out all these tasks for 47 Squadron, while Lieutenant J.S.B. MacPherson of Ottawa served briefly as an observer with 17 Squadron. There was nothing routine, however, about the assignment of Flight Sub-Lieutenant H.V. Reid, formerly of the Royal Newfoundland Regiment, and Flight Sub-Lieutenant F.S. Mills of Toronto. In late August Romania had made its ill-timed declaration of war against the Central Powers; in October, as things began to go badly for King Ferdinand's army, an RNAS detachment that included Reid and Mills flew to Bucharest to lend assistance. There is no record of Reid's adventures – perhaps he was with Mills – but both of them escaped from Bucharest on 3 December, just three days before the Romanian capital fell to a combined attack by the German generals von Mackensen and von Falkenhayn. Mills, we know, accompanied the dispirited remnants of Ferdinand's army in their headlong retreat towards the Russian border. Then he was stricken with appendicitis, fortunately not acute, and was evacuated to England via Russia and Scandinavia. Both Canadians were back on operations in the spring of 1917 and Mills was subsequently awarded a DSC for his 'zeal and devotion to duty during the period from July 1st to December 31st, 1917,' when he was stationed at Eastbourne.

The initial six months of the RFC's Macedonian campaign were distinguished by the relatively little air-to-air fighting that took place. The greatest danger facing airmen of both sides was that associated with flying fragile and unreliable machines among the wind-laced peaks of the battlefield.

The first Canadian casualty on the Macedonian front was Lieutenant J.C.F. Owen of Annapolis Royal, NS, a pilot with 17 Squadron. On 18 February 1917 he was shot down by *Oberleutnant* Rudolf von Eschwege, the leading German fighter pilot in the theatre. Making a forced landing near the German airfield at Drama, Owen set fire to his BE12. When the Bulgars inexplicably proposed to court-martial him for destroying his aircraft, von Eschwege successfully interceded on his behalf.<sup>4</sup>

\* Born in Milwaukee, Wisc., Croil moved to Montreal with his family at the age of eleven. His later education was in Scotland. He worked as a civil engineer in Scotland and as the manager of a tea and rubber plantation in Ceylon before returning to Britain to join the Gordon Highlanders. In 1916 he was seconded to the RFC. He later served as Canada's first Chief of the Air Staff, 1938-40.

There were almost mediaeval elements of chivalry to that incident, but it marked the end of an era. Only a week later, on the morning of 26 February 1917, 'like a bolt from the blue,' twenty German aircraft 'in superb formation' swept down the Vardar and bombed the French airfield at Gorgop, destroying or damaging twelve of its machines. In the afternoon they were back to bomb 47 Squadron's base at Yanesh, killing and wounding twenty-eight. This was *Kampfgeschwader 1*, just moved from the Romanian front where the victorious German campaign had ended. It was a self-contained bombing unit with a number of twin-engined aircraft, indiscriminately called 'Gothas' by the British soldiers but including AEGs, Rumplers, and Friedrichshafens as well as a single Gotha, with its own fighter protection flight and a railway train which carried its administrative services and supplies. After its effective attacks on the two airfields, *Kampfgeschwader 1* returned the next day to bomb the British military camp outside Salonika, causing 376 casualties. Croil was one of those who tried ineffectually to drive off the Germans. His slow BE12 was no match for the aircraft he had singled out; 'owing to the speed of the enemy machine,' he reported, 'I was unable to climb to its height and at the same time keep pace with it.'<sup>5</sup>

Lieutenant-General G.F. Milne, commanding British troops in Macedonia, had only sixteen anti-aircraft guns for the whole of his front. He therefore appealed to Vice-Admiral C.F. Thursby, commanding the Eastern Mediterranean Squadron, to provide help for the hard pressed RFC. Thursby immediately sent a few Sopwith 1½ Strutters, and these were combined with RFC BE12s and DH2s to form a make-shift fighting unit. Effective German bombing continued, however, until the RNAS supplied a unit selected from 2 Wing, and known as F Squadron, to mount a counter-bombing offensive. From 29 April to 25 May this squadron, in which at least nine Canadians\* were flying, raided dumps and enemy bases, as well as Hudova aerodrome. On 10 May its members observed that *Kampfgeschwader 1* had decamped, along with its special train, subsequently to reappear in Belgium. It seems likely that the German decision to shift its crack bombing unit was related to Western Front priorities and to the projected air offensive against England, but F Squadron had undoubtedly made life difficult for it. Flight Sub-Lieutenant D.D. Findlay of Carleton Place later recalled that once the naval pilots had mastered the then unfamiliar tactics of formation flying, they 'literally ruled the skies' over Macedonia.<sup>†6</sup>

After the German bombers had gone, F Squadron made only intermittent visits to Macedonia following its month-long stay. The two corps squadrons got on with their work as best they could, with some of their members doubling as fighter

\* H.R. Aird of Toronto (POW 30 Sept. 1917), H.H. Arundel of Winnipeg, D.M. Ballantyne of Montreal, E.S. Boynton of Toronto, D.D. Findlay of Carleton Place, Ont., F.J. Mackie and D.P. Rowland, both of Winnipeg, J.L.A. Sinclair of Toronto, and A.Y. Wilks of Montreal.

† Findlay, later a group captain in the RCAF, recalled that 'We bombed enemy shipping, bridges, railway centres, troop concentrations and, I am ashamed to say, burned the ripe grain crops in Bulgarian Macedonia with petrol bombs.' The raids on crops took place from 6 to 17 June 1917. Findlay to Halliday, 23 June 1962, D.D. Findlay biographical file, DHist; H.A. Jones, *The War in the Air: being the Story of the Part played in the Great War by the Royal Air Force*, v (London 1935), 401

pilots. One of these was Lieutenant A.G. Goulding of Holland, Man. He had joined 17 Squadron in February and would serve there for more than a year, longer than any other Canadian. During the summer Goulding, who earned the MC, DFC, and *Croix de Guerre* for his work, usually flew as one of the escorts for the regular bombing missions conducted by a combined flight from the two squadrons, as well as doing a certain amount of low-level bombing himself. On 21 May, to take an example, he attacked a column of twenty-six horse-drawn wagons going through the Rupel Pass and claimed to have destroyed seven of them and caused a stampede. But even in the hands of pilots as expert as Goulding the BE12 was grossly unsuitable for fighter operations against much superior German aircraft. Goulding and the other escorts attempted to cope with several attacking Albatros D-IIIs during a 17 Squadron bombing raid on Drama airfield on 28 June. That they were able to protect the bombers, though their inadequate machines were riddled, was testimony both to their skill and courage.<sup>7</sup>

During the latter part of 1917 bombing operations continued at a relatively low level of intensity. This was just as well. Whenever the Germans chose to react to British raids, their fighters found the RFC's antiquated machines easy prey. In September General Milne urged the War Office to enlarge and improve the air service in Macedonia: 'I am responsible for a wide extent of front, which entails heavy demands on the Flying Corps for reconnaissance, photography and artillery observation. In addition to this, offensive bombing raids are undertaken as often as possible, and there is constant fighting in the air with an enemy whose machines are more up to date than our own. I am anxious to widen the scope of the offensive measures undertaken by the Flying Corps, the more so as the size of my force precludes any other method of making our presence really felt in this country.'<sup>8</sup> Given the positions of the enemy, which seemed impregnable, the air arm was the only means Milne could see of bringing the war home to the Bulgarian people.

A number of Canadians arrived as reinforcements in the autumn, including Lieutenant E.J. Cronin of Saint John, NB, who went to 17 Squadron, and Second Lieutenants A.S. Clark, address unknown, D.L. Graham of Griswold, Man., and W.D. Robertson of Victoria, who joined 47 Squadron. An observer who had recently transferred from the CEF, Clark had an experience on 5 October which was typical of the position in which the RFC found itself at this time. While returning from a bombing raid on Cestovo, the Armstrong Whitworth in which he and his pilot were flying was attacked by three Halberstadts and an Albatros two-seater. The Germans split into pairs and attacked from either side, Clark switching his fire from side to side to meet each pass. By the time they had reached the northern shore of Lake Doiran the AW's engine had been knocked out and the pilot was wounded; only the appearance of three more RFC machines saved the pair. The pilot glided to a landing on the British side of the lines, although he 'ran into a barbed wire barricade sustaining considerable damage.'<sup>9</sup>

By the end of 1917 both the *Entente's* situation in Macedonia and the RFC's position had improved. In June a *coup d'état* had been engineered as a result of which King Constantine abdicated in favour of his more compliant second son, Alexander. Venizelos returned to power, Greece entered the war, and Greek troops took over most of the Struma front. For the RFC the most important deve-

lopment was the appearance of a number of SE5as to replace the BE2s. The acquisition of this fine fighter enabled the RFC to win air superiority in 1918.

Meanwhile a new theatre of operations was opening for the RFC in Italy. When that country declared war on Austria-Hungary on 23 May 1915, the Italian land forces were organized in four armies. The First and Fourth Armies were deployed on the Trentino sector from the Swiss boundary to the Upper Piave; two Alpine groups occupied the Carnia sector in the centre; the Second and Third Armies covered the right flank along the Isonzo River; and another seven divisions were held in reserve. The *Aeronautica del Regio Esercito* (Royal Army Air Service), consisting of four dozen aeroplanes and three dirigibles, was organized into twelve *squadriglie*.<sup>10</sup>

The Austrians opposed the Italians on the same three sectors with only ten divisions and eight in reserve, that is, at about half the strength of the Italians. The *K.u.K. Luftfahrtruppen* (Imperial and Royal Air Service Troops) had thirty-six aeroplanes, one dirigible, and ten balloons in July 1914 and had not appreciably increased by May 1915. Little bombing was done and there appears to have been a tacit agreement between the Italian and Austrian air forces that the Italians would not interfere too much as long as their cities were spared from aerial bombardment.<sup>11</sup>

The battlefield stretched for 375 miles along the lower Alps from Switzerland to the Adriatic. The Italians had the advantage of interior lines of communications but the Austrian salient in the Trentino was a continual threat to Italy's own salient in the Isonzo sector. Between late June 1915 and mid-September 1917 the Italians fought no fewer than eleven battles on the Isonzo, with Trieste as their main objective. They were not conspicuously successful in any of these offensives, and in May 1916 the Austrians attempted a diversion in the Trentino sector. Although they achieved some success, the Italians regained most of the lost ground in subsequent operations.

In January 1917 an inter-allied conference was held in Rome where a 'frank discussion of the whole military and political situation' took place, including a review of the Italian campaign. An Anglo-Italian convention was signed on 7 May 1917 and contingency plans were made for British assistance. Shortly afterwards sixteen howitzer batteries were sent from England to bolster the Italian artillery. Allied reinforcements were followed by German ones, after the near collapse of the Austrians during the Eleventh Battle of the Isonzo in September 1917. Seven German divisions under the command of *General Otto von Below* reinforced the Austrians. The Julian Alps, with summits around 6500 feet, provided an excellent screen for massing reserves and artillery and the head of the British Mission in Italy reported that 'a considerable reinforcement of German aeroplanes has been received by the Austrians.'<sup>12</sup>

Meanwhile the Allies decided to withdraw twenty-three of the twenty-eight batteries they had loaned the Italians because the latter had switched from the

\* A report by Lieutenant-Colonel T. Carthew dated 15 April 1918 indicates that the following types of German and Austrian aeroplanes were flying on the Italian front: Albatros D-III and D-V, Berg, KD, Phönix, two-seater Brandenburg, two-seater DFW, and three-seater AEG bombers. Carthew report, 15 April 1918, Air 1/463/15/312/137

offensive to the defensive and because the batteries were required elsewhere. By 17 October the guns had left Italy for France, Egypt, or Mesopotamia. By then, the Austro-German Order of Battle contained some forty-five divisions, but the Italian armies had also more than doubled in strength. Their air force, re-equipped with newer aeroplanes, now consisted of thirteen fighter squadrons, fourteen bomber squadrons, and thirty corps squadrons.<sup>\*12</sup>

The Twelfth Battle of the Isonzo, which resulted in the Caporetto *débâcle*, began on 24 October 1917. Following a bombardment by some 300 Austrian and German guns the Italian Second Army's left wing melted away. Von Below captured 275,000 prisoners, the Italians lost twice that number through casualties and desertions, and Italy urgently sought help from her allies. The British ordered two divisions, organized as XIV Corps, to be sent from France; the French despatched four French divisions. One fighter and one corps squadron were detailed to accompany XIV Corps, 28 (Camel) Squadron and 34 (RE8) Squadron,<sup>†</sup> forming 51 Wing, RFC. As the extent of the Italian disaster came to be more clearly realized, additional assistance was despatched. Another British formation, XI Corps, was ordered to Italy together with 42 (RE8), 45, and 66 (Camel) Squadrons, 14 Wing Headquarters, a balloon wing of two companies, an aircraft park, and a supply depot. On 18 November 1917 Brigadier-General T.I. Webb-Bowen, the commander of the RFC in Italy, opened VII Brigade Headquarters in Mantua.<sup>‡</sup> When the British divisions were moved closer to the front than had originally been anticipated in order to help in the revival of Italian morale, RFC formations moved in concert with them. By early December 28 and 66 Squadrons were based at Grossa, northwest of Padua, with wing headquarters close by at Villalta, and 34, 42, and 45 Squadrons at Istrana aerodrome, west of Treviso.<sup>13</sup>

\* The Italian army occupied roughly the same front as before with sixty-eight infantry and four cavalry divisions. Eight fighter squadrons were now equipped with Hanriot HD1s, four with Spad 13s, and one with Nieuport 17s; all the bomber squadrons were equipped with Italian-built Caproni three-engined bombers.

† No 28 Squadron had been assigned to V Brigade (RFC) in France on 8 October 1917. No 34 Squadron had carried out corps duties with IV Brigade (RFC) since mid-July 1916. Canadians with 28 Squadron at the time of its move to Italy included W.G. Barker of Dauphin, Man., H.B. Hudson of Victoria, C.M. McEwen of Radisson, Sask., C.W. Middleton of Toronto, L.P. Watt of Westmount, Que., and D.C. Wright of Toronto (KIA 20 Feb. 1918). With 34 Squadron were C.G. Andrews of Regina, G.E. Creighton of Dartmouth, N.S., A.S. Dunn of Campbellford, Ont., C.L. King of Sault Ste Marie, Ont., H.J.W. McConnell of Owen Sound, Ont., and J.G. Sharp of Toronto.

‡ Nos 42 and 45 Squadrons were withdrawn from II Brigade (RFC) on the Western Front on 16 November 1917, concentrated at Fienivillers, and entrained at Candas beginning 25 November. No 66 Squadron, employed on special missions and especially low-level work since March 1917 with 9 (HQ) Wing, left France on 17 November. The only known Canadian with 42 Squadron at the time of its transfer to Italy was H.A. McEwen of Regina. With 45 Squadron were J.R. Black of Orillia, Ont., R.J. Dawes of Montreal, E.M. Hand of Sault Ste Marie, Ont. (POW 1 June 1918), D.W.R. Ross of Vancouver (KIA 11 Jan. 1918), H.J. Watts of Winnipeg (WIA 24 May 1918), and T.F. Williams of Woodstock, Ont. Those with 66 Squadron included H.B. Bell of Toronto, W.C. Hilborn of Alexandria, BC (WIA 16 Aug. 1918, POW 26 Aug. 1918), A.B. Reade of Toronto (KIA 21 Feb. 1918), J.A.M. Robertson of Westmount, Que. (POW 8 Dec. 1917), M.A. Rowat of Sudbury, Ont. (KIA 12 Feb. 1918), R.W. Ryan of Goderich, Ont., and S. Stranger and T.R. Whitehead, both of Montreal.

Well before allied assistance could make itself felt, the Italians had reconstituted the front along the line of the River Piave and the despondency engendered by the Caporetto disaster had been swept away by a remarkable upsurge in the national will to resist. The British relief of Italian formations only began on 30 November, elements of the XIV Corps taking position on the line of the upper Piave in a region known as the Montello, with the French on their left. Behind the British was the Montello plateau; to their front, across eight hundred yards of the many-channelled Piave and exposed to view, were the Austrian lines. The rear areas of the enemy, however, were considerably higher than the British position, affording him excellent observation while hiding his own dispositions. The uneven ground, similar to that in Macedonia, permitted easy concealment of artillery. Consequently both artillery co-operation and general reconnaissance became vital tasks for the RFC, whose airmen had to adapt themselves quickly to a terrain utterly different from the Western Front and to provide intelligence for army staffs seeking to do the same.

Even before British units came into the line, therefore, the RFC undertook its first operational flight. On 29 November 1917 an RE8 from 34 Squadron, escorted by four of 28 Squadron's Camels, flew a photographic reconnaissance mission over the Montello front. The escort was led by Captain W.G. Barker, who had been slightly wounded in the head while flying with 15 Squadron on the Western Front in August. Posted to England as a flying instructor with four victories to his credit, he had wangled his way to 28 Squadron instead and now found himself in Italy. He and his companions discovered immediately that the Austrian air force was ready to contest vigorously any intrusion on their air space.\*

Barker estimated that the Camels were attacked by about twelve Albatros D-IVs. 'I dived on one & fired about 50 rounds and he went down in a vertical dive,' he reported. 'I followed & as he flattened out at 5000 feet I got a burst of about 80 rounds at close range. His top right wing folded back to the fuselage and later the lower wing came off.' But the Camel pilots had no easy task. As Barker observed, 'During all the ... fighting we were outclassed in speed & climb'; it was not until the contending fighters had spiralled down to 5000 feet that 'the Camel was a match for the D.4.'<sup>14</sup>

Barker was to become by far the most successful allied fighter pilot on the Italian front. Air Chief Marshal Sir Philip Joubert de la Ferté, who as a lieutenant-colonel commanded 14 Wing in Italy, once said of him 'that of all the fliers of two world wars none was greater than Billy Barker.' Despite such praise, and his position as fourth-ranking Canadian ace, Barker's reputation has been overshadowed by others, probably because he won most of his laurels in Italy. He is chiefly known for his spectacular solo fight against overwhelming numbers when he was with 201 Squadron on the Western Front in October 1918. This exploit, which

\* By late 1917 the *K.u.K. Luftfahrtruppen*, under the command of Generalmajor Emil Uzelac, had grown considerably. Nearly all its available aircraft had been transferred to the Italian front from Russia, though small detachments flew in the Balkans. It was supported by a domestic aircraft industry and no longer had to rely upon German aircraft, though many of its machines were German types produced under licence. Its basic flying unit was the *Fliegerkompanie (FK)* of up to eight aircraft; in early 1918 there were at least 63 FKs on the Italian front, a high proportion being *Jagdfliegerkompanien*, with as many as twenty fighters each.

won him the Victoria Cross, has caused him to be remembered as a lone wolf and something of a gambler. The testimony of those who were associated with him, however, shows Barker to have been a very different kind of man. As both flight leader and squadron commander he concerned himself with the careful indoctrination and shepherding of inexperienced pilots. Though among the most decorated of all RAF airmen – in addition to his VC he was awarded the DSO and Bar, the MC and two Bars, the *Croix de Guerre*, and the Italian Silver Medal for Military Valour – he was not regarded by his companions as a trophy-hunter but rather as one generous in sharing his triumphs and in assigning victories to others that he might well have claimed for himself. Barker excelled in individual fighting tactics, especially the head-on attack, but the record shows him to have been also a highly effective formation leader.<sup>15</sup>

Some of his qualities as leader and fighter pilot emerge from his account of an offensive patrol undertaken on 3 December:

After ... escorting RE8's, Lt. Cooper, Lt. Woltho and I crossed the river Piave at a low altitude and attacked a hostile balloon N.E. of CONEGLIANO. I fired about 40 rounds into it at a height of 1,000 feet and it began to descend. I then observed an Albatros Scout about to attack Lt. Woltho. I immediately engaged the E.A., drove him down to 300 feet, and then succeeded in getting a burst of fire into him. He dived vertically, crashed, and the wreckage burst into flames. I then reattacked the balloon, and after firing at very close range, saw it in flames on the ground. I broke up a party of enemy who were at the balloon winch. A large covered car proceeding E. from CONEGLIANO turned over into a ditch when I attacked it. Later I attacked small parties of enemy and dispersed them.<sup>16</sup>

This report also brings out Barker's taste for low-level attacks, a pursuit he seems genuinely to have enjoyed, unlike most of his fellow fighter pilots.

In the period before the arrival of RFC units the Austrians and their German allies had dominated the air over the Italian front and their observers had succeeded in photographing most of the Venetian plain. The challenge to enemy air superiority first offered by 28 Squadron was soon taken up by 66 Squadron as well. From 6 December the squadron began to fly regular offensive patrols, mostly between Pieve di Soligo and Santa Lucia di Piave on XIV Corps front, but also on the Italian front between Asiago and Valstagna, thirty miles to the west of the British sector. After an initial brush with eight enemy fighters, 66 Squadron had some difficulty in bringing their opponents to battle, though during the next two weeks Second Lieutenants T.R. Whitehead of Montreal and M.A. Rowat of Sudbury, Ont., were each credited with victories and Second Lieutenant S. Stanger of Montreal with an aircraft driven down out of control. Losses also occurred, such as on 8 December when Second Lieutenant J.A.M. Robertson of Westmount, Que., was 'last seen going down N.E. in steady glide with 3 E.A. following him.' Robertson became a prisoner of war. The same day 28 Squadron was over Asiago and Second Lieutenant C.W. Middleton of Toronto shared in the shooting down of an Aviatik two-seater.<sup>17</sup>

In the course of their offensive patrols both squadrons had reported enemy airfields at a number of locations, including Godega and San Felice. On 15 and 16 December 42 Squadron carried the fight to the enemy and bombed the latter field,

but not until the RFC extended its attacks to a second airfield was the enemy driven to retaliate. According to T.F. Williams of Woodstock, Ont., then a second lieutenant with 45 Squadron, Barker and Lieutenant H.B. Hudson of Victoria 'went over to some Austrian airfield on Christmas Day with a placard saying "Merry Christmas" and they proceeded to shoot up the place good and plenty.'<sup>18</sup> On Boxing Day, a member of 34 Squadron has recalled, he was walking to the aerodrome at Istrana when he noticed that the British anti-aircraft guns had gone into action: 'This was a most unusual occurrence, and when I looked to see what the target was, I could hardly believe my eyes. About five miles away, flying at all heights between 500 and 3,000 feet, was the most heterogeneous collection of aircraft I have ever seen. Making no attempt to keep together, but on the contrary, widely scattered, thirty or forty Austrian machines were slowly approaching us ... Every few hundred yards one would drop its bombs, and make for home. Finally, about twenty reached the aerodrome and bombed it. After bombing the aerodrome they did not go straight back, but becoming more dispersed they wandered all over the country at about 1,000 feet.'<sup>19</sup> This untidy raid, it seems, was the aftermath of an over-long Christmas celebration and the idea, born sometime in the small hours, was to exact reprisal for the raids of the RFC. Six enemy machines came down at scattered points in the neighbourhood of Istrana; as Williams remembered it, 'We were pretty near all day picking up prisoners.'<sup>20</sup>

As the year turned, fighting on both the Italian and Macedonian fronts was mainly confined to the air and, ultimately, the allied air forces established a measure of aerial superiority in both theatres. In Macedonia the relatively small numbers of aircraft involved gave the air war the appearance of a series of individual combats, in which A.G. Goulding, flying a Nieuport 17 obtained from the French rather than one of the SE5as now coming into use, took a leading role. On 5 January 1918, while on an offensive patrol at 12,000 feet over Seres, he was 'coming out of the sun' when he encountered an Albatros D-III. He fired only one round when his gun jammed but fortunately his enemy spun out and fled. Later in the month while on another patrol he met a DFW Aviatik attempting to reconnoitre the XVI Corps front. Again attacking from the sun, Goulding fired two magazines of 150 rounds before his gun jammed once more. The Aviatik, however, was forced down by an SE5a and then bombed where it lay. Goulding shared credit for the victory and was subsequently awarded the MC for this action and 'great determination and gallantry [shown] on many occasions.' In March Goulding, now flying an SE5a and with the help of another machine, forced down another Aviatik intact after its observer had waved a white handkerchief as a sign of surrender; the two fighter pilots then landed beside the enemy aircraft in an open field and took the crew prisoner.<sup>21</sup>

Other Canadians arrived in Macedonia over the winter, although few stayed long. Among them were Captain G.M. Brawley of Toronto, Lieutenants H.M. Jennings of Hagersville, Ont., C.D.B. Green of Oakville, Ont., J.P. Cavers of Toronto, A.M. Pearson from Manitoba, and three who were awarded DFCs before the fighting finished – Captain G.G. Bell of Ottawa and Lieutenants Walter Ridley from British Columbia and the piquantly-named Arthur Eyquem de Montaigne Jarvis (known more usually as 'Jock') of Toronto. They, along with Goulding, became members of the new 150 Squadron, RAF, formed on 1 April 1918 from

the 'A' Flights of 17 and 47 Squadrons. No 150 was given a fighter role while the old squadrons, relieved of this responsibility, performed corps duties as well as long-distance reconnaissance and bombing. The new squadron saw considerable action. In April and May the pilots regularly broke up enemy patrols and recorded a number of enemy machines probably destroyed. On 28 May Goulding shared his seventh victory when he attacked a DFW at twenty yards range, firing two hundred rounds from both guns until they jammed and he had to break off the engagement. The German was finished off by another pilot.<sup>22</sup> On 1 June two enemy aircraft fell victim to the guns of Bell and Green, who managed to defend themselves against a dozen attackers. Bell reported: 'When escorting bomb raid on CESTOVO, Captain Bell and Lieutenant Green on S.E.5a's, were attacked by twelve hostile machines over CASANDULE. A lengthy combat ensued. An E.A. (Siemens Schuckert) Immelmanned in front of my machine. I fired at point blank range. He burst into flames. Two E.A. then dived on my tail, I turned sharply to my right and observed Lieutenant Green diving on one of them which turned over on his back and went down out of control. We were attacked continuously but managed to keep E.A. off until bombers regained our lines. My engine then cut out and as Vickers gun was jammed we fought a defensive fight towards our lines.'<sup>23</sup>

On 12 June Green and three others were attacked by four enemy aircraft while escorting a bombing raid. Green put a short burst into one which crashed in a field on the west side of the Vardar. He then attacked a second which dived away with engine trouble and was seen burning on the ground. Three days later, when Green was on an offensive patrol with Goulding, Bell, and a fourth pilot, they were attacked by eight Albatros D-Vs, one of which Green sent down out of control near Smokvica, Goulding meanwhile claiming his eighth victory with Bell's assistance. Green sent another machine down in flames near Palmis on 20 June 1918, and with Brawley's help Bell shot down still another near Kalateppe on 23 June. Five days later, while escorting a photographic reconnaissance over Paljorka and Furka, Green fired at an enemy aircraft, followed it down from 9000 to 1000 feet, and saw it crash southwest of Furka. In all, thirteen of the enemy were destroyed or driven down out of control for the loss of only one British aeroplane. The casualty was Lieutenant D.L. Graham whose machine was hit by anti-aircraft fire and came down in flames. Graham along with Jennings had remained in 47 Squadron in the essential if perhaps less glamorous tasks of reconnaissance, bombing, and artillery spotting. Jennings transferred to 150 Squadron in August.<sup>24</sup>

Escorted by the superior fighting machines of 150 Squadron the two corps squadrons went about their business of reconnaissance and bombing virtually unmolested. Their bombing effectiveness was greatly enhanced in August and September when each squadron received a flight of DH9s, a year after General Milne had requested aircraft of this type. Meanwhile their protectors steadily increased their claims of enemy aircraft destroyed or forced down, through offensive patrolling as well as escort duties. On 26 July, Jock Jarvis claimed two victories within three hours. While returning from escort duty over Kalinovo at about 1000 hours he attacked a machine which had been engaging one of his wing

\* R.P.A. Crisp of Hamilton, Ont., and B.M. Murray of Foxwarren, Man., arrived during the summer of 1918. The former went to 47 Squadron, the latter to 17 Squadron.

men. The enemy promptly broke away but Jarvis 'had another burst at him' and the German machine went into a steep dive and crashed southeast of Cerniste. That afternoon Jennings went patrolling over Orlyak and opened fire at very close range on a DFW two-seater. The enemy aircraft went into a flat spin as the fabric peeled off the top port plane, and the machine hit the ground south of Elisan. The pilot and observer were taken prisoner.<sup>25</sup>

On 3 September, while escorting a reconnaissance machine on photographic duties near Lake Doiran, Cavers was attacked by six hostile planes. He crash-landed in the lake and, while swimming from the wreckage to the shore, was shot to death by the pilots who had brought him down. Ridley and the rest of his flight had witnessed the final stages of Cavers' combat while returning home in their SE5as from bomber escort duty. Joined by two nearby Camels, they went after his killers, and four of them were destroyed, one by Ridley, in a general fight which started at 13,000 feet and came down to a few dozen feet above the ground.<sup>26</sup>

In Italy the pattern of air operations was generally similar, if on a larger scale. Early in January 1918 VII Brigade Headquarters issued new offensive patrolling instructions to 14 Wing. The squadrons were ordered to provide four patrols daily of four to six aircraft each in three sectors, designated as Western, Central, and Eastern. The Western Patrol covered the area from Asiago to Mount Grappa during the hours of greatest activity; the Central Patrol, opposite the British front, covered from Valdobbiadene to Pieve di Soligo and from Farra di Soligo to Conegliano; and the Eastern Patrol flew between Conegliano and Ceggia, well down towards the mouth of the Piave. In addition, one flight of six machines was detailed for escort duties as the need arose. The instructions stipulated that henceforth artillery, photographic, and reconnaissance machines in corps areas would not normally be accorded close protection and the fighter squadrons would not be permanently detailed for specific patrols but rather would be rotated regularly according to roster, the normal patrol lasting two hours.<sup>27</sup> In sum, by these dispositions the RFC accepted a share of responsibility for fighter patrols over a major portion of the Italian front from Asiago to the Adriatic, in addition to its normal support duties for British ground formations. The RFC in Italy, imbued with Trenchard's offensive doctrine, was seeking to impose its will upon the enemy air forces.

One way to force the enemy to commit himself was to bomb his airfields and static installations, and a series of raids were mounted as the RFC pressed for air superiority. On New Year's Day, for example, ten RE8s from 42 Squadron, escorted by two flights each of five Camels from 28 and 66 Squadrons, bombed the German Fourteenth Army Headquarters at Vittorio. This raid provided Barker with the opportunity to drive down one enemy aircraft and shoot down another that crashed on a mountain side northwest of Vittorio, when 'the wreckage burst into flames and was seen rolling down in the Valley.'<sup>28</sup> On 5 January a bombing raid

\* Barker's flight consisted of H.B. Hudson, C.M. McEwen, D.C. Wright, and one non-Canadian. In his combat report Barker states his flight was attacked by twelve enemy aircraft, later reinforced by six more. The eighteen enemy aircraft were in fact attacking ten RE8s and ten Camels. Two Canadians were in the other flight, H.B. Bell and A.B. Reade; their flight commander failed to return and the lateral controls on Reade's aircraft were shot away by an enemy observer.

was carried out on the Cordenons aerodrome three miles northeast of Pordenone by ten RE8s of 34 Squadron escorted by fifteen Camels. The aircraft were detailed to rendezvous at Castelfranco at 0930 hrs but, according to 66 Squadron's report, the RE8s went by at such a speed that the Camels could not overtake them! Nevertheless, the fighter group encountered enemy aircraft over Sacile at 14,000 feet where Barker's flight drove down two of the enemy.<sup>28</sup>

Fog and rain restricted flying operations for the remainder of the month but did not halt them altogether. In one action on 11 January Lieutenant D.W.R. Ross of Bobcaygeon, Ont., was killed. His section leader at the time, Williams, who had now been promoted captain, recalled the occasion fifty years later:

I was leading the show where Ross was killed. We were escorting reconnaissance machines which photographed quite a large number of aerodromes that afternoon. We had six Camels - two threes - Captain John Firth was leading one section on one side and I was leading the three on the other. Ross was one of my wing men. When we got almost to the last aerodrome a cloud of Huns were collecting above us. They hadn't attacked up to that point and then they started coming down in two and threes at a time. Ross signalled that he was being attacked but he was much too high. I signalled to him to come down a little closer but that was the last I ever saw of him. We were tangled up in continuous fights. I remember having three head-on actions with this one man. I could have turned over but to do so I would have had to have left the RE8. So I had to watch him until he turned and then come back at him and keep over the RE8 all the time because I felt responsible for getting this RE8 back. On the last part of the show, when there were only three of us left, one Hun came down in a highspeed dive. I got that machine, I am sure. I had to use fifty per cent more deflection on account of his speed. My shots happened to hit him and he went down so I got a credit on that show.<sup>29</sup>

Losses were inevitable at any stage of the air war, but there is every indication that the RFC was gaining the upper hand over its antagonists during the late winter of 1917-18. In Williams' view this came about because the RFC had better fighter aircraft, more experienced fighter pilots, and more skill in formation flying than its opponents. In his opinion the Italians had suffered from the lack of any established patrolling procedure and because their leading fighter, the Hanriot, carried only a single gun and lacked the performance of the Albatros. The Austrians were no mean opponents, but the Camel had already proved itself against the Albatros on the Western Front, and did so again over Italy. Speed was the Austrians' chief advantage; by crossing the lines at points where the Italian air force had prime responsibility, they would sweep around from the rear, sometimes catching the RFC's patrols on their way home. To the experienced airmen in the RFC squadrons there was a great contrast between the strain and intensity of the virtually incessant air battle in France and the hide-and-seek tactics of the Austrians. As Williams saw it, 'Flying in Italy was a holiday by comparison with that in France. It was a different type of warfare entirely. It was more of a gentleman's war. The scout pilots we encountered in Italy didn't seem to have the same viciousness that we met up with on the Western Front where it was a blood for blood affair. They were not so aggressive in Italy.'<sup>30</sup>

It is probable that Austrian airmen held a different opinion. During January 1918 the RFC claimed to have destroyed twenty-nine enemy aircraft and two kite balloons at the cost of four of their own machines. Barker and his wing-man, Hudson, accounted for the balloons. On 24 January the two were ostensibly engaged in 'Practice Fighting, and Machine Gun Test': 'While testing guns over the lines we sighted two balloons in a field which we attacked and destroyed in flames,' Barker reported. 'A horse transport column of about 25 vehicles which was passing these balloons was also attacked and stampeded.'<sup>31</sup>

Though the weather deteriorated in February, the RFC continued to take advantage of the opportunities it was offered and Canadians took a particularly prominent part.<sup>†</sup> On 2 February all the fighter squadrons were out in force. At 1050 hrs Barker was leading Hudson, Lieutenant C.M. McEwen<sup>‡</sup> of Griswold, Man., and Second Lieutenant Woltho, a British pilot who frequently flew with him, on a regular offensive patrol when they intercepted a group of five Aviatiks escorted by three Albatros D-vs. In a few brief minutes McEwen had shot down two of the Aviatiks; Barker despatched another, an Albatros as well, and 'seeing a crowd around the E.A. ... attacked it and set the wreckage on fire.'<sup>32</sup> An hour later, in the same sector, four Camels from 45 Squadron overtook an Albatros two-seater and its escorting fighter: 'The formation dived down from the sun and 2/Lt G.H. Bush fired a good burst into the Scout at close range. It dived down for about 5,000 feet and then started a wide spiral but 2/Lt T.F. Williams headed it off from the Enemy side of the Lines and on the formation closing round, the enemy pilot put his hands above his head and glided down and landed at Road 2, on Montello.'<sup>33</sup>

On the 4th Second Lieutenant H.B. Bell of 66 Squadron shot down an Albatros D-III in flames near the Austrian airfield at San Giacomo di Veglia, and each member of a four-Camel formation from 45 Squadron, escorting RE8s, accounted for an Albatros. This fight was a 'hard' one, lasting for thirty minutes, 'enemy pilots being aggressive and skillful but being completely outmanoeuvred by Camels.' Second Lieutenant D.G. McLean, a newcomer to the squadron, 'drove down 1 E.A. in spin and spinning down on top of it shot E.A. down near SUSEGANA as it pulled out of spin,' reported his fellow pilots. But McLean himself was killed when his aircraft crashed and burnt near San Croce. The next day

\* Lt-Col Joubert, commanding 14 Wing, demanded, 'in writing,' Barker's explanation of why, 'contrary to orders,' he made this attack. Barker's reply was singularly lame. When he and Hudson spotted the balloons, he wrote, 'I regret very much that for the moment I forgot the order against low flying.' Correspondence of 25-26 Jan. 1918, W.G. Barker biographical file, DHist

† Canadian arrivals during the first two months of 1918 included J.E. Hallonquist of Mission City, BC (WIA and POW 29 Oct. 1918), C.L. Amy of Prince Albert, Sask., J.B. Guthrie of Oakville, Ont. (KIA 10 May 1918), G.D. McLeod of Westmount, Que. (POW 8 June 1918), and D.W. Pratt of Toronto, to 28 Squadron; R.C. Cain of Ottawa and H.L. Holland of Toronto, to 34 Squadron; A.D. MacDonald of Cobalt, Ont., to 42 Squadron; M.R. James of Watford, Ont., J.C. McKeever of Listowel, Ont., and D.G. McLean of Bridgeburg, Ont. (KIA 4 Feb. 1918), to 45 Squadron; and A.L. Mercer of New Aberdeen, NS, to 66 Squadron.

‡ As an Air Vice Marshal, McEwen commanded 6 (RCAF) Bomber Group of the RAF's Bomber Command during the Second World War.

Barker and Hudson went up to look for an enemy two-seater reported to be working over the Italian lines and at 17,000 feet just north of Odense they encountered an Aviatik escorted by two Albatros D-vs. Barker shot the left wing off an Albatros, which broke up in the air; he then chased down the Aviatik, which landed in a field and turned over. Meanwhile Hudson fought the other Albatros down to two hundred feet before it crashed near Portobuffole.<sup>34</sup>

On 12 February Barker and Hudson once more converted a gun test into a destructive operation, Colonel Joubert raising no objection on this occasion:

On approaching the PIAVE preparatory to testing guns, Capt. Barker observed that thick ground mist made conditions ideal for attacking balloons. He and Lt. Hudson crossed the PIAVE at NERVESA and flew to CONEGLIANO, then turned E. to FOSSAMERLO ... where 2 large observation balloons and 3 small ones were closely parked a few feet in the air, the small ones being between the large ones. Capt. Barker and Lt. Hudson attacked the large balloons which caught fire and all five were destroyed. There was no interference from the ground, except desultory and very badly aimed firing from 2 heavy tracer batteries near the balloons. The haze formed a good screen for the machines.<sup>35</sup>

All these activities demonstrated the ascendancy the RFC fighter squadrons had obtained. It was rare that Austrian aircraft had the opportunity to observe allied movements, or to work with artillery, while British corps machines were almost unimpeded in their tasks. It had not been so at the beginning. On 29 November 1917, when 34 Squadron first began operations, Lieutenant R.H. Luxton from Saskatchewan, in making his observer's report, noted that 'Formations of E.A. very active. Patrol and escort were repeatedly attacked from W. and E. sides of the River Piave at 9,000 feet, which eventually rendered further photos impossible.' It was the same on the following day. Luxton reported that 'although well escorted, photo machine was continually harassed,' while Lieutenant H.J.W. McConnell of Owen Sound, Ont., piloting another RE8, and his observer, had to fight off enemy attacks and so took no photographs whatever. Crews also found it wise, in these early days, to skirt carefully round the Italian lines, for their allies made no distinction between them and the Austrians.<sup>36</sup>

The corps squadrons naturally took some time to acquaint themselves with the terrain, and to establish a good working arrangement with the British, French, and Italian artillery. Of six RE8s working with the guns on 7 December, five reported unsuccessful shoots. This was partly because of poor visibility, as Luxton and a Toronto pilot, Lieutenant W.M. Davidson, reported, but there were indications that airmen and gunners were not communicating well with each other. For example, Lieutenant A.S. Dunn, an observer from Campbellford, Ont., alleged that 247th Siege Battery had failed to put out ground strips at the place agreed on, and therefore no shoot could take place. By mid-month, however, co-operation between aircraft and artillery was improving and enemy interference had begun to diminish. On 17 December twelve machines from 34 Squadron were able to carry out a variety of missions without distraction. Lieutenant C.L. King of Sault Ste Marie, Ont., with his observer, engaged in a successful shoot with a British battery; though they were up for two hours, they saw only two enemy aircraft,

which approached the Piave and then turned tail. Lieutenant C.G. Andrews of Regina and his observer, Lieutenant J.G. Sharp of Toronto, found the 'line very quiet-no movement observed' until their carburettor was damaged by anti-aircraft fire and they were forced to return to base.<sup>37</sup>

By the turn of the year the corps squadron airmen had become thoroughly conversant with the front and were developing a close working relationship with their batteries, although on 4 January Andrews could not persuade 247th Siege Battery to alter the direction of its fire, even though most of its rounds had been off target. Most of the time, however, the shoots went well and the Austrians began to take great pains to conceal the location of their batteries. As Lieutenant G.E. Creighton of Dartmouth, NS, discovered, 'the quantity of scrub and soft ground' around battery positions made observation very difficult, because bursts were small or hidden altogether. By early March, nevertheless, 14 Wing's corps squadrons were carrying on shoots as competently as their counterparts on the Western Front. In a typical shoot on 13 March Lieutenant H.L. Holland of Toronto and his observer, working with 176th Siege Battery, ranged over two hundred rounds on a number of Austrian gun positions, destroyed one gun pit and damaged two others, and though they were in the air for over three-and-a-half hours they saw no enemy aircraft whatever.<sup>38</sup>

The mastery the RFC had obtained over a broad sector of the front had no crucial effect on ground operations, since neither side contemplated offensive action during the winter months. At most, it made life a little easier for British and allied troops, and correspondingly worse for the Austrians. This inactivity, and mounting evidence that Germany intended a major offensive on the Western Front, induced the British and French governments, without consulting their Italian partner, to withdraw some of their troops from Italy. During March and early April the British transferred the 41st and 5th Divisions to the Western Front, and the RFC withdrew several units, including 42 Squadron. The remaining corps squadron and the three fighter squadrons were grouped in 14 Wing, under the command of Lieutenant-Colonel Joubert de la Ferté,<sup>39</sup> and figured in the order of battle as part of 'General Headquarters Troops.'

Prior to the decision to reduce their forces in Italy the French and British had been planning a spring offensive, not across the Piave into the Venetian plain but rather against the Trentino sector. Only after the threat of the Austrians debouching from the Trentino had been eliminated could a Piave offensive be confidently undertaken. It had therefore been agreed that the British and French should be transferred to the Asiago plateau, to launch, under Italian command, an attack in the direction of Trento. In mid-March the British XIV and the French XII Corps began the shift to their new positions and the RFC moved in conformation. No 66 Squadron moved to Casa Piazza, 45 Squadron joined No 28 at Grossa, 34 Squadron went to Villaverla, and 14 Wing HQ went to Sarcedo in the XIV Corps rear area. All were stationed within ten miles of Vicenza and within easy range of both the new and the old fronts.<sup>40</sup>

To compensate for the loss of 42 Squadron, 14 Wing received a flight of six two-seater Bristol F2bs in mid-March. This superb all-round aircraft was exactly what was needed for the mountain operations now facing the RFC. 'Bristol Flight' was first attached to 28 Squadron, but on 30 March it became part of 34 Squadron

as 'Z' Flight. A third of its complement was Canadian, Lieutenants Amy, Guthrie, and Pratt joining it from 28 Squadron, Sharp coming from 34 Squadron.<sup>41</sup>

The Asiago sector was a key part of the Italian mountain front. About twelve miles behind the British front-line trenches lay the Lombardy plain, the object of any Austrian attack from the Trentino. From the plain the ground rose to a range of foothills close to 5000 feet high, along the summits of which the British reserve line was placed. To the front of the reserve line the ground fell away abruptly to the Asiago valley, the front line running along the foot of this rugged and thickly wooded slope. Nowhere were the Austrian trenches closer than half a mile; behind them rose a second series of 5000 foot peaks. Defence in depth, according to the best Western Front precepts, was out of the question; if the British and French were compelled to fall back upon their reserve lines, it would be impossible for their guns to support them. Even as it was, the artillery from its positions along the reserve line had to accustom itself to large angles of depression in order to carry out its work. Precision firing under such circumstances was unlikely, and for artillery co-operation aircraft the situation was further complicated by the many difficulties in observing fall of shot in mountainous terrain.

For the corps machines to function effectively it was necessary, as always, for the fighter units to establish air superiority in this new sector. The accepted method of bringing the enemy to battle was to attack his observation and ground co-operation machines, and this the RFC proceeded to do. Thus on 10 March Second Lieutenant R.J. Dawes of Montreal was given credit for shooting down a DFW, on 18 March Lieutenant G.A. Birks, also of Montreal and a new arrival to 66 Squadron, claimed a Rumpler, and on the 24th Birks' destruction of an Aviatik was confirmed by Stanger, his wing-man. The Austrians reacted vigorously at first and combats became frequent, with Barker, Birks, McEwen, and Stanger playing prominent roles. On 18 March Stanger and another pilot were attacked by four red Albatros D-Vs while on Eastern Patrol,\* and Stanger was credited with shooting one down. On 27 March T.F. Williams registered 45 Squadron's two-hundredth victory.<sup>42</sup>

On 10 April Barker moved to 66 Squadron as a flight commander; his new surroundings had no perceptible effect upon his extraordinary career. On 17 April he shot down an Albatros D-III, verified by his companions, Stanger and W.C. Hilborn of Alexandria, BC. Stanger claimed another. On this day alone the RAF – as it had now become – claimed to have shot down eleven enemy aircraft and it was becoming clear that the tide of battle had turned decisively.† In May the air struggle became even more one-sided, the RAF claiming to have shot down sixty-four machines at little cost to itself. Of these, 28 Squadron records

\* It is possible that these were part of *Hauptmann* Godwin Brumowski's *Fliegerabteilung*; its aircraft were painted red in imitation of Richthofen's 'Circus.' Brumowski, Austria's leading fighter pilot, was credited with forty victories by the end of the war.

† New Canadian arrivals in April included J.M. Kelly of Montreal (POW 22 Oct. 1918) and J.T.J. McA'Nulty of Ottawa, who were attached to Wing HQ until October, when they went to 66 Squadron; L.A.A. Bernard of Montreal (WIA 9 May 1918), R.E. LaDouceur, an Ontarian whose address is unknown, and R.H. Lefebvre of Montreal (K 13 April 1918), all of whom went to 66 Squadron; A.E. Ryan of Brantford, Ont. (WIA 29 July 1918), to 34 Squadron and N.H. Hamley of Red Deer, Alta (WIA 20 Aug. and 1 Nov. 1918), to 28 Squadron.

credit McEwen with six, Stanger with four, Hudson with three, and one each for Hallonquist, Dawes, and McLeod. In 66 Squadron Barker received credit for eight, Birks for seven, Hilborn for three, and Bell and MacDonald with one apiece.<sup>43</sup> Though pilots' scores were invariably inflated during the latter stages of the First World War,\* there seems little doubt that on the Asiago front the Austrians and their German allies were badly over-matched. On 24 May, for example, Barker, in company with Birks and a British pilot, Lieutenant G.F.M. Apps, caught up to a pair of Albatros D-Vs and a Berg scout 'just over the valley at the southern foot of M. COPPOLO':

Capt. Barker attacked the rear E.A., which spun down. Lt. Birks attacked the Berg and after a very short fight E.A. went down with wings off. This was observed by Capt. Barker. At this time Capt. Barker observed three D.V.'s diving from the S. towards Lts. Birks and Apps, who were engaging the remaining two E.A. in the valley. Capt. Barker got under the tail of one of these E.A. unobserved and after firing about 40 rounds E.A. went down out of control and crashed on some hutments in the valley and burst into flames. This was seen by Lts. Apps and Birks. Lt. Apps engaged one of the two remaining E.A. of the first formation, who was on Lt. Birks' tail. Lt. Apps fired a long burst when E.A. was doing a climbing turn and E.A. went down out of control and crashed in the valley. E.A. was observed to go down out of control by Capt. Barker and to crash by Lt. Birks. The remaining D.V. of the first three E.A. was an exceptionally skilful pilot and Lt. Birks fought him for a long time then Lt. Apps joined in the attack. Neither pilot could get E.A. down so Capt. Barker joined in the fight and got on tail of E.A. Capt. Barker fired a short burst at E.A. who went down out of control and dived vertically into the same hutments where Capt. Barker's first E.A. burst into flames. This was observed by Lts. Apps and Birks.<sup>44</sup>

The three RAF pilots saw only one out of six machines escape from this fight, one which 'went away very low down in the direction of FELTRE.' The whole affair lasted just fifteen minutes.

The Camels also undertook a good many bombing missions, usually against enemy airfields. Since they could carry only four 20-lb or 25-lb bombs, such raids were only of nuisance value. One occasion merits mention, however. On 14 March Stanger and a British colleague were sent to bomb enemy shipping in the Adriatic. It seems likely that they followed the Piave to its mouth, then flew along the coast until they caught sight of two vessels off Miramare, a port just north of Trieste. They claimed direct hits on the second 'tramp,' since 'black smoke and debris blew into the air,' and machine-gunned both vessels. The round trip from their airfield must have been close to two hundred miles.<sup>†45</sup>

Corps squadrons on the Western Front undoubtedly would have envied the degree of protection enjoyed by 34 Squadron. Even lengthy reconnaissance missions often took place unhindered. On 2 May Lieutenant J.B. Guthrie of Oakville, Ont., and his observer, flying a Bristol Fighter at 14,500 feet, made a round trip of enemy installations to the rear of the Asiago front without challenge from an enemy machine, though visibility was 'perfect.' They were able to report in con-

\* See 572-4.

† During the Italian campaign Stanger was awarded both the MC and the DFC

siderable detail upon enemy activity in the Val d'Assa, a deep gorge on the British left, at Folgaria, where there was a large camp, and at Mattarello in the Adige valley. They described the situation at the enemy base at Trento, reported the number of aircraft on the ground at Pergine airfield east of Trento, and noted dumps, airfields, and train and troop movements at various points in the Val Sugana, through which ran the River Brenta, a rail line, and the main road to Bassano. Along the way they took forty photographs. The cumulative worth of such intelligence, built upon as weather permitted, gave the British command a clear picture of the enemy's situation.<sup>46</sup>

Artillery co-operation work in the Asiago sector did not proceed so smoothly, despite the absence of enemy aircraft. Shoots could be disrupted, and often were, for many reasons – from a careless hand upon the Morse buzzer to a defective wireless receiver. But the mountain front had special problems. For example, on 7 June Lieutenant R.C. Cain, an English immigrant to Canada in prewar days and a former federal civil servant, who had enlisted in the RCHA in 1914 and was now serving as a pilot in 34 Squadron, located an anti-aircraft gun firing from the Val d'Assa. He sent the call 'NF' ('Guns firing at ...') and the correct map co-ordinates to his battery but 'the rounds in response fell about 250 yards over.' Such inaccuracy resulted because the enemy battery was 'just behind the crest and not down in the valley'; a near-miss in these circumstances was as good as an eighth of a mile. Very often the airmen simply could not find their targets, though their location was known, because the Austrians had used natural cover so well. On 17 April Holland spent forty-five minutes circling in the area of the target before he gave up and flew a patrol instead. Until adequate maps from aerial photographs were prepared, the airmen were often led astray. Only persistence enabled Cain to find his target on 23 April, because his map 'only gave an approximate idea of the roads at this spot.'<sup>47</sup>

Time and time again crews reported their inability to send corrections to batteries because they were unable to locate the fall of shot. On 3 May Cain, on a destructive shoot with 302nd Siege Battery, recorded the twenty rounds fired as 'ws' (washouts). 'Target very difficult to observe on. Most bursts never showed, and others, when the smoke appeared above the trees, were impossible to locate with any exactitude. The smoke was so slow in mounting that it dispersed considerable [sic] and necessitated a wait between rounds.' Not only tree cover but haze, deep shade, and the shadows cast by passing clouds complicated the task of observation of fire. On 10 May King and his observer failed to see many rounds which disappeared into the impenetrable darkness of a gorge. 'Enemy battery position was located near a cliff, which on the North side dropped sheer away,' he reported; 'consequently any shells falling plus were unobserved causing a great number of washouts ...' Just a month later, after a similar experience, Cain summed up the problem: 'This shoot should be done at a considerable height, otherwise the bottom of the valley can only be seen when almost directly over it. The haze in the bottom of the valley ... made bursts difficult to spot and easy to imagine.'<sup>48</sup>

In spite of everything, 34 Squadron conducted many successful shoots. On 10 May Andrews found the shooting during a bombardment of the Austrian trenches 'very good'; the majority of rounds he observed were direct hits. On 1 June

Holland carried out an excellent shoot for an alert battery. Spotting ten vehicles in convoy, he sent a 'GF' call (used for fleeting targets). The response was immediate: '9 M.T. were set on fire and completely burned. They were evidently filled with ammunition as they were exploding every 2 or 3 seconds.' On 10 June Lieutenant K.B. Forster of Red Deer, Alta, and 197th Siege Battery formed a potent combination; several direct hits were obtained within the first few rounds fired against a hostile battery and this exemplary shoot continued through two-and-a-half hours and 150 rounds. At its close, air-ground teamwork had in all likelihood destroyed the enemy battery.<sup>49</sup>

All this air work had been predicated upon an allied offensive. By late May, however, the signs had multiplied that the Austrians were themselves about to attack and the Italian Supreme Command dropped all offensive plans. This last effort by the Austro-Hungarian Empire to achieve victory in Italy was made possible by the release of their divisions from the Eastern Front, and prompted also by Ludendorff's urgings as the German assaults on the Western Front waned at the end of April. Though the Austrians knew that they were inferior in manpower, guns, and aircraft, they hoped to collapse the allied front by simultaneous attacks upon the British and French in the Asiago-Mount Grappa sector and upon the Italians along the Piave, concentrating especially upon Papadopoli Island. In early June the enemy renewed his attempts at aerial observation of the Asiago front. This was countered by instituting a close patrol between Forni and Gallio, along an eight-mile stretch of the front, pilots being ordered not to leave this line except to attack a hostile aircraft in the immediate vicinity, and a 'long offensive patrol' five miles deeper in enemy territory between Casotto and Cismon. These patrols effectively prevented enemy attempts at reconnaissance.<sup>50</sup>

At 0300 hrs on 15 June the Austrian bombardment opened all along the front from the Adriatic to the Asiago plateau. On the allied right, a thick fog combined with artificial smoke and tear-gas soon filled the valley of the Piave, enabling the Austrian infantry to cross the river by boats and pontoons at a number of places. On the left, British veterans of the Western Front found the bombardment less severe than those that they had known in France and Flanders. Much of it was unregistered, in part an indication of the success of the RAF in preventing aerial artillery observation. At 0700 hrs Austrian troops began to penetrate the British wire and during the morning they achieved limited gains at several points. RAF assistance was much reduced because of mist and low clouds; nevertheless, the fighters were out by 0435 hrs when Lieutenant R.G. Reid of St John's, Nfld (a cousin of the RNAS' H.V. Reid who had participated in the ill-fated Romanian venture), took off as part of a 66 Squadron patrol. A few minutes later Lieutenants W.M. MacDonald of Vancouver and H.D. McDiarmid of Victoria let down through the clouds to drop bombs on marching troops north of Asiago; having returned for more, they bombed 'a mass of troops' in Val d'Assa and optimistically claimed 'great havoc caused.' Barker, Birks, and Bell also found targets in Val d'Assa some time later, but by 0900 hrs visibility was too poor to continue.<sup>51</sup>

Given the weather, some crews from 34 Squadron did surprisingly effective work. Second Lieutenant H.W. Minish of Gilbert Plains, Man., directed fire on three hostile batteries in the Val d'Assa. Lieutenant C.L. King and his observer,

Lieutenant K.O. Bracken of Toronto, were out at 0520 hrs. They sent down three 'GF' calls on enemy transport, 'NF' calls on twenty-one active enemy batteries, and dropped two 20-lb bombs on a touring car. A direct hit on the car was obtained, King reported, 'and car was seen to leave road.' Lieutenant R.C. Cain and his observer were quite as enterprising, being in the air from 0825 hrs until noon. They machine-gunned enemy infantry, horse lines, and transport; shortly after 1100 hrs they found field guns firing in the open from a slope. Finding that machine-gun fire stopped the batteries only momentarily, they called down artillery fire. The batteries ceased firing; 'several shell holes were just by the guns and must have done considerable execution among the personnel.'<sup>52</sup>

Meanwhile the RAF had been shifted to the Piave front. All units joined in low-level operations which T.F. Williams recalled clearly:

Every Camel was loaded up with four 20-lb Cooper bombs and we were sent out to bomb and strafe the troops and the pontoon bridges. I can well remember the masses of troops up on the east side of the Montello, shooting into the Austrians making the crossing. We were down low enough to see the expressions on their faces. We bombed the pontoon bridges and I then took my flight entirely on ground strafing. I flew about four patrols that day on low-level work. We were going from dawn to dusk, dropping bombs and strafing. We bombed so low that the blast of the bombs just lifted our aeroplanes.<sup>53</sup>

Just after noon nine Camels from Williams' 45 Squadron attacked the enemy crossing in the Montello sector; by 1600 hrs more than thirty Camels from all the fighter squadrons were involved, as well as some of the Bristols and RE8s of 34 Squadron. Barker led a strong attack by 66 Squadron against the bridges in the Montello sector. He later stated:

The Montello, owing to its height, dominated the Venetian plain and under its cover [the Austrians] had thrown two pontoon bridges across the river. The leader selected the bridge farthest upstream and individual bombing commenced from about 50 feet. This bridge was quickly broken in two places and the pontoons, caught by the fast current, were immediately dashed against the lower bridge, carrying it away also. When this attack commenced these bridges were crowded with troops which were attacked with machine-gun fire. Many were seen to be in the water. This done, troops on small islands and in row boats were machine-gunned.<sup>54</sup>

Successful attacks were also made on Austrian bridges lower down on the Piave, and on troop concentrations on Papadopoli Island. During the night the Austrians succeeded in repairing some bridges and building new ones, but the RAF again knocked several of them down. Renewed air attacks on the 16th were again highly successful. Cain, of 34 Squadron, flying solo with two 112-lb bombs, attacked two bridges in the Montello sector, where the Austrians had established their most dangerous bridgehead: 'First burst was on the bridge at H95.25 which hit about 10 yards N.E. of eastern end of bridge among a considerable quantity of transport some of which galloped over the bridge and jammed, while others went straight into the river. The second bomb was an OK on the western end of the other

bridge ... This bridge was evidently under repair from previous raids ... There are a considerable number of pontoons stranded at different points down the river.<sup>55</sup> Five Camels from 66 Squadron, led by Barker, destroyed another bridge below the Montello, shooting up troops in the bridgehead. Nevertheless, in the early afternoon Andrews of 34 Squadron reported that seven bridges on the lower Piave were still intact.<sup>56</sup>

But what the RAF had begun, the river itself completed. On the 17th heavy rain fell, preventing further bombing, but during the night the Piave rose and its torrents ripped away almost all the bridges which remained. On the 18th special air reconnaissances covered the whole of the Piave front from Vidor above the Montello to the Adriatic. Cain and his observer brought intelligence about the stretch of river from Vidor to S. Dona di Piave, finding only two bridges intact near the latter point. They reported bridges from the Austrian-held shore across the Papadopoli Island but none from it to the Italian side. King and Bracken, who flew the line later in the day, confirmed these findings: all the bridges, including those to Papadopoli, had now been washed away. But from S. Dona to the sea they found eleven bridges intact.<sup>57</sup>

Faced with this interdiction of their supply lines by both men and nature, and therefore unable to expand their several bridgeheads over the river into a continuous line, the Austrian command decided to withdraw and did so successfully on the night of 22–23 June. Rarely did aircraft play so significant a part in a major military operation during the First World War.<sup>58</sup>

The RAF casualties during and immediately following these operations were remarkably light, given the amount of low-level work. Only three Canadians were lost during the period: Lieutenant J.G. Russell of St Thomas, Ont., and Second Lieutenant C.P. Urlich of Winkler, Man., were among 28 Squadron's fatal casualties, while Lieutenant E.M. Brown of Princeton, Nfld., a member of the Bristol Fighter flight of 34 Squadron, became a prisoner of war.\*

According to Barker's personal records, it was sometime during June that he, Birks, and McEwen dropped the following note at Godega airfield:

Major W.G. Barker, D.S.O., M.C., and the Officers under his Command present their compliments to Captain Bronmoski, 41 Recon. Portobouffole, Ritter von Fiala, 51 Pursuit, Gajarine, Captain Navratil, 3rd Company and the Pilots under their command and request the pleasure and honour of meeting in the air. In order to save Captain Bronmoski, Ritter von Fiala, and Captain Navratil, and gentlemen of his party the inconvenience of searching for them, Major Barker and his Officers will bomb GODIGO [sic] aerodrome at 10-0 a.m. daily, weather permitting, for the ensuing two weeks.

*Hauptmann* Godwin Brumowski was Austria's leading ace; *Oberleutnant* Benno Ritter von Fiala Fernbrugg and *Oberleutnant* Friedrich Navatil were also well-

\* Russell (KIA 15 June 1918) had arrived on 28 May and Urlich (KIA 24 June 1918) on 22 June, two days before his death. During the month R.G. McLaren of Ormstown, Que., joined 28 Squadron and D.J. Teepoorten of Vancouver went to 66 Squadron. Arriving at 34 Squadron's Bristol Flight were A.A. Harcourt-Vernon of Toronto (POW 4 Nov. 1918), A.G. Lincoln of Calgary, W.W. McBain from Atwood, Ont., and A.L. McLaren of Montreal.

known and distinguished fighter pilots. There is no record that they responded to Barker's absurd and vainglorious challenge.<sup>59</sup>

After the failure of the Austrian offensive, the Italian Supreme Command was urged by *Général* Foch to undertake offensive operations of its own. To the Allied Supreme Commander it was important that pressure be maintained upon the Austro-Hungarian army, not only to take advantage of the rebuff just administered to it, but also to co-ordinate operations in Italy with those planned against the Germans on the Western Front for mid-July. Moreover, it seemed obvious that the Hapsburg Empire had reached a state of incipient disintegration and that the deep national schisms within it were having disruptive effects upon the army, a good part of which was non-Austrian. *Generale* Armando Diaz, the Italian CGS, was able to resist these and later arguments for offensive action, however, at least in part because Italian politicians were not prepared to risk again the heavy casualties the country had sustained earlier in the war. Not until 1 October, after the spectacular allied successes on the Western Front in September, did Italy decide to take the offensive.<sup>60</sup>

In the long pause from late June to 24 October the Italian front remained static, though there were the usual trench raids and artillery 'hates.' Unlike the other arms, however, the RAF, faithful to its offensive doctrine, continued to patrol aggressively, if only to ensure that the routine work of daily reconnaissance and artillery co-operation was carried on without hindrance. On 3 July a new Bristol Fighter squadron, No 139, was formed, made up of 'Z' Flight from 34 Squadron and drafts of aircrew from England and the Western Front. The seven Canadians already in 'Z' Flight were joined by Captain G.W. Curtis of Montreal and Second Lieutenant W.B. Ramsay of Lumsden, Sask.\* On 14 July Barker was promoted major and given command of the new squadron. He took his Camel with him from 66 Squadron and continued to add to his victories until posted to 201 Squadron in France at the end of September.<sup>61</sup>

The addition of 139 Squadron was balanced by the departure of 45 Squadron to France on 20 September. Its departure was linked to a general reorganization and reduction of the British contingent in Italy. Infantry brigades were reduced from four to three battalions (this had been done on the Western Front in early 1918) and the nine battalion surplus went to France. The British 48th Division and a French division remained on the Asiago front while, in October, the other two British divisions, together with an Italian corps, were formed into Tenth Army under a British commander, Lord Cavan, and placed on the Piave front to spearhead the coming attack.<sup>62</sup>

Prior to the opening of the offensive the RAF dealt two punishing blows to the Austrian air force by striking at the chief sources for pilot reinforcements on each of the battle fronts. On 4 October every available Camel from 28 and 66 Squadrons, armed with phosphorus and high-explosive bombs, attacked the Campofornido advanced training school southwest of Udine. The attack was a complete

\* Canadians arriving in Italy during the June-October period included D.B. and R.H. Foss, brothers from Sherbrooke, Que., to 28 Squadron; W.N. Hanna of Sarnia, Ont., A.E. Popham of Victoria, L.J. Shepard of Port Stanley, Ont., and Harold Shone of Toronto, to 34 Squadron; A.V. Green of Vancouver to 45 Squadron; W.J. Courtenay of St Thomas, Ont. (KIA 7 Oct. 1918), A.G. Kettles of Bruce Mines, Ont., and Robert Menzies, address unknown, to 66 Squadron.

surprise, and many aircraft and several hangars were destroyed. The attackers were escorted by Stanger and McEwen and the two Canadians were credited with shooting down three Albatros D-IIIs over the mouth of the Tagliamento River. So successful was this raid that the next day the flying school at Egna, northeast of Trento, was bombed.\* Twenty-two pilots took part, among them Ontarians W.J. Courtenay and A.G. Kettles, R. Menzies, address unknown, R.H. Foss of Sherbrooke, Que., and the Newfoundlander, R.G. Reid. According to the report sent the Air Ministry by Colonel Joubert, at least three hangars and several parked aircraft were set ablaze and mechanics who rushed out to save the burning machines and buildings were driven off by machine-gun fire. Joubert noted particularly the action of Foss, who sent an LVG plunging into a nearby canal before dropping his bombs.<sup>63</sup>

Before the end of the Italian campaign RAF squadrons were to be surfeited with such low-level work. The crux of *Generale* Diaz's plan was to force a crossing of the Piave while containing the Austrian Sixth Army on the Trentino front. The key sector was that between the Montello and Papadopoli Island. Lord Cavan's Tenth Army was to cross at Papadopoli, with the Italian Eighth Army on its left. Together the two armies were to strike north and northwest for Vittorio Veneto and Sacile, aiming to cut the communications between the Austrian forces in the mountains and those on the Venetian plain.<sup>64</sup>

The air plan was simplicity itself: 'to obtain the mastery of the air and to maintain it throughout the action.' The roles assigned the RAF's 14 Wing placed emphasis upon 'free scouting and cruising expeditions' for the fighters, in addition to bomber escort duties. Ground attack at low levels was to be 'an integral part of the bombing raids' and was to be conducted by all types of machines. In keeping with the tight security which was a notable feature of this offensive, RAF squadrons did not leave their concentration in the rear of the Asiago sector until the eve of the battle. On 22 October 14 Wing HQ moved to Dosson, three miles south of Treviso and near Lord Cavan's headquarters at Villa Marcello. On the same day 28 Squadron moved to Limbrage and 34 Squadron to San Luca, both airfields being in the Treviso area. No 66 Squadron remained at Casa Piazza, ready if need be to support the British 48th Division on the Asiago.<sup>65</sup>

The exception was 139 Squadron, which moved to Grossa on 9 October to be in a better position to carry out strategic reconnaissance in the period preceding the attack. The Bristol Fighters, operating in formations of three to five machines, carried out extensive photographic work, including low-level flights over Papadopoli Island on 17 and 20 October. Their photographs showed sixteen bridges intact between Papadopoli and the Austrian-held bank. On 22 October five Bristol Fighters reconnoitred the Tenth Army's proposed line of advance as far as Sacile

\* Jones, *War in the Air*, vi (London 1937), 288, and map opposite 273, locates Egna immediately south of Bolzano and southeast of Udine, in the Venetian plain. In his report Colonel Joubert identifies it as 'N.E. of Trento, 50 kilometres over the lines,' and describes it as 'a finishing school for pilots destined for the TRENTINO front.' In his combat report Second Lieutenant R.H. Foss says that he pursued an LVG 'down the ADIGE valley away from aerodrome.' See Joubert to Air Ministry, 10 Oct. 1918, Air 1/1985/204/273/97; Foss combat report, 5 Oct. 1918, Air 1/1854/204/213/15.

and Pordenone, taking numerous photographs and reporting enemy activity in detail. A final photographic mission was flown on the 23rd to gather intelligence of the Livenza, the next river barrier beyond the Piave. This invaluable work took place without any serious challenge from enemy aircraft.<sup>66</sup>

The Tenth Army's crossing of the Piave was to take place in two phases: first the capture of Papadopoli, a low, sandy island about four miles long, covered with trees and scrub and entrenched by the enemy, and then the passage of the several shallow channels which separated the island from the east bank. The photographs obtained by 139 Squadron, of which five thousand copies were made for distribution to formations, made plain the problems involved and helped determine Lord Cavan upon a night crossing to make an initial lodgment on the island. On the night of 23-24 October a territorial battalion of the Honourable Artillery Company (despite its title, an infantry unit) was ferried in flat-bottomed boats across the several hundred yards of the main channel, surprising the Hungarian garrison and securing the western half of Papadopoli. By the 27th the whole of the island had been taken and the Tenth Army and its flanking neighbours were ready for the main assault. Just before 0700 hrs the 7th and 23rd British Divisions moved off to attack the Austrian works on the left bank, and at 0705 hrs R.C. Cain, now a captain with a DFC, took off to work with the British guns against enemy batteries. In half an hour he was back; his observer, Second Lieutenant M. Nicol of Edmonton, had been wounded by machine-gun fire from the ground. Picking up Second Lieutenant L.J. Shepard of Port Stanley, Ont., Cain was in the air again by 0810 hrs. The pair sent down several 'NF' calls against Austrian batteries firing upon the advancing groups, but at 0955 hrs were attacked by a pair of Albatros D-IIIIs. Cain, wounded in the foot, managed to return to base. For the first time in some weeks enemy aircraft were both numerous and aggressive over the front. Two other Canadians, King and his observer, Bracken, had taken off very early, at 0620 hrs, but had not been heard from since that time.<sup>67</sup>

Early intelligence of the development of the attack was brought in by a number of 34 Squadron's artillery and contact patrol machines. At 0840 hrs Lieutenant K.B. Forster of Red Deer, Alta, and Second Lieutenant A.E. Popham of Victoria reported to Corps Headquarters that the Austrians were holding trench systems behind the Piave in strength, but half an hour later they passed word that 'Our troops appeared to be holding the N. bank of the PIAVE in considerable force.' Later in the morning two more Canadians, Lieutenant P.M. Hodder and Second Lieutenant H.W. Minish, found that British troops were close to their final objectives for the day. Some anxiety was caused at the command level by the initial failure of the Italians to move up on the flanks, but at 1240 hrs Popham, in a message dropped at Corps Headquarters, reported that large numbers of Italian troops had crossed the river on the British right. Less than an hour later he added that on the left a line of trenches was 'heavily held by Italian Infantry and the cavalry on N. bank of PIAVE.' At this point the RE8 was attacked by two Albatros D-IIIIs and returned home 'badly shot about.' At 1300 hrs units of the 23rd Divi-

\* King brought his damaged RE8 down in enemy territory. The two apparently evaded capture and rejoined their unit on 4 November.

sion, having reached their final objectives at Borgo Malanotte, were counter-attacked, and having run short of ammunition had to give ground. Two RE8s, one flown by Hodder and Minish, were sent out at 1540 hrs to drop ammunition to them and the position was quickly retaken. So good was the collaboration, through ground signals, between advancing units and corps aircraft, and so specific were the reports of air observers that after the first suspenseful hour commanders had at their disposal throughout the day a clear account of the constantly changing course of battle.<sup>68</sup>

While 34 Squadron airmen went about their duties, the fighter pilots, as ordered, were scouring the battlefield at low level. They sought their targets chiefly in the area immediately behind the battle line. At 0730 hrs a 28 Squadron flight, including Hallonquist and R.H. Foss, took to the air, spending two hours attacking troops and batteries close to the front. Later in the morning Hamley and R.G. McLaren went down to a hundred feet to bomb a kite balloon; after it burst into flames they attacked retiring transport.\* Several patrols from 66 Squadron found more targets than they could handle. H.D. McDiarmid was one of several pilots to bomb and stampede a mass of enemy transport fleeing from the front, while A.G. Kettles claimed yet another kite balloon. In the afternoon Hamley and a companion bombed a bridge across the Monticano River from fifty feet. Becoming separated from his wing-man, Hamley climbed to 3000 feet and single-handedly attacked five Albatros D-Vs. After shooting one down within sight of some British infantry, he himself was brought down when his engine was hit and a bullet lodged in his finger. He crash-landed on Papadopoli; though the Camel was further damaged, Hamley returned safely to his squadron. The work of the fighters was not so important to the course of the battle as that of 34 Squadron, but for the Austrians it was an omen.<sup>69</sup>

On the 28th Tenth Army did not resume the attack until noon. It was able, however, to enlarge the bridgehead by up to two miles, with some elements reaching the line of the River Monticano, where the Austrian defensive works were known as the *Königstellung*. No 34 Squadron continued its careful and detailed reporting of the allied advance, while 28 Squadron spent the day driving enemy aircraft from the battle zone, though Hallonquist and Foss attacked troops and transport on the army's left, close to the front of the Italian XVIII Corps. Low-level work was left to 66 Squadron, whose pilots ranged over the whole arc of the bridgehead. McDiarmid's early morning patrol attacked targets around Oderzo on the Monticano, directly to the front of the Italian XI Corps, the army's right wing. At the same hour Menzies and Kettles were part of a patrol that shot up troops in Codogne, marching south towards the British 7th Division while Lieutenant D.J. Teepoorten of Vancouver attacked a supply column moving towards Vazzola, one of the division's objectives for the day. Shortly after the ground assault began a

\* Both pilots and groundcrew of 28 Squadron were laid low by influenza on the eve of the offensive. 'A' Flight had only a flight sergeant, two corporals and two air mechanics to maintain six Camels and the wing commander's Pup, and the other two flights were in worse state. To keep aircraft flying, the groundcrew available worked eighteen hours and more a day during the offensive; 'the poor old "busses" [sic] didn't get cleaned up for days.' Flight Sergeant Frank Brook later wrote. Brook to Williams, 5 Dec. 1918, T.F. Williams biographical file, DHist

patrol which included Lieutenant J.T.J. McA'Nulty of Ottawa saw troops retreating north from Codogne and infantry milling about at the Visna crossroads. Both groups were attacked at low level, and 'many casualties' claimed. Two patrols, whose members included Teepoorten, Menzies, and Kettles, discovered troops concentrated in a wood west of S. Stino di Livenza, with their equipment 'laid out in rows' in an adjoining field. These troops, who were in a position to move against the right flank of the advance, were heavily attacked with bombs and machine-guns by the fighters and Teepoorten finished off the exercise by destroying a kite balloon.<sup>70</sup>

The 29th was the climactic day of the campaign. The Austrians meant to make a stand on the Monticano-Conegliano line and had brought up reinforcements to do so. The river itself was contained within twenty-foot dikes which commanded the flat vineyard country to the south. But as early as 0930 hrs British infantry had crossed the river and punched a hole in the *Königstellung*. According to Austrian accounts this first break-in occurred when a Czech regiment panicked and fled when machine-gunned from the air, never having been exposed before to this form of attack. So numerous were such attacks that it is impossible to identify the patrol involved. Though British troops did not advance far beyond the Monticano on the 29th, the breach they had made split the Austrian Sixth and Isonzo Armies; by the afternoon airmen were reporting that the roads leading away from the front were clogged with retreating troops and transport, upon which they inflicted serious damage. Three RAF aircraft were lost on this day, two of them flown by Canadians. Shortly after noon Captain Hallonquist's machine was hit by 'vigorous machine-gun fire from the ground' after he had released four bombs on a transport column going north into Veneto. He was seriously injured when his aircraft landed atop a truck.\* Lieutenant W.W. McBain of Atwood, Ont., was shot down near Pordenone, a town through which elements of the Isonzo Army were streaming. He survived the landing unscathed, though the Camel was a total wreck, but was then fired upon by understandably hostile infantry. He bolted for a farm house and there he hid, in civilian clothes provided by his sympathetic hosts, until the Allies swept through.<sup>71</sup>

On the 30th the Tenth Army approached the Livenza, a river wide, swift, and deep. Under other circumstances it would have constituted a major obstacle. By this time, however, a large part of the Austrian army was in full retreat, the Austro-Hungarian Empire itself in dissolution, and resistance minimal. A bridgehead was secured at Sacile, and the River Tagliamento reached on 3 November; British troops had crossed it when the armistice accorded the defeated Austrians took effect on the 4th.

In these last days RAF fighter pilots saw spread before them the spectacle of an army in collapse. Roads leading back to the Tagliamento and to Austria were clogged with masses of troops, some maintaining marching order, others mere

\* Hallonquist was well cared for in Sacile hospital until released by British troops 'to the great joy of all in No. 28 Squadron.' On 2 November he was awarded the bronze medal of the *Valore Militare* and later the DFC for his 'display of the highest skill and courage' and for 'setting a fine example to other pilots.'

crowds. Mingled with them were staff cars, horse transport, horse- and tractor-drawn artillery, and all the impedimenta of a huge army. By the roadsides were trails of discarded uniforms, stores, baggage, and weapons. Many of the troops were no longer armed; even those who were, however, had no real defence against the cruel punishment now meted out to them. Flying down the roads at tree-top level, the Camels attacked relentlessly until the end. The devastation wrought by RAF strafing during Allenby's Palestine offensive is usually regarded as one of the great air achievements of the First World War, yet British air attacks in the final phase of the Italian campaign were equally devastating, though almost unknown.

The chaos created by the fighters fills many pages of squadron record books. A few instances drawn from 66 Squadron will suffice. On the 30th Teepoorten's patrol found the road leading to Pordenone 'full up with motor and horse transport, facing east, mostly stationary, the road being blocked up. Attacked a battalion of infantry ... the infantry being mixed up with the stationary transport, going in no particular direction.' The next day ten Camels, including machines flown by McDiarmid, Menzies, Kettles, and Teepoorten, swept down the main road between Sacile and Pordenone, Menzies' patrol reporting 'great damage done on this road with our bombing, causing huge blockages.' On 1 November the Camels caught endless columns of the fleeing enemy at the congested approaches to the crossings of the Tagliamento, where converging roads caused enormous jams. McA'Nulty and Teepoorten bombed 'a large amount of transport and troops, stationary and facing east ... the majority were direct hits.' At S. Vito al Tagliamento McDiarmid and Kettles, with two others, came upon and attacked thousands of infantry who could not move because of a block created by several howitzers drawn by steam-tractors. The next day, in the same sector, Menzies and McA'Nulty machine-gunned a battalion of troops they found 'engaged in destroying bridges and roads, also burning villages behind them.'<sup>72</sup>

In the wake of the Camels came marching British infantry. What they found was described in the history of the 23rd Division:

Along the Pordenone road, which ran wide and straight through open country, there was terrible evidence of the loss in power of a river to save a routed army. Before war was carried into the air a defeated army, by placing a river between itself and pursuit, might hope to gain some respite to restore its shattered morale, but the deepest and widest river is of no avail against aircraft. The sights on the Pordenone road moved the victorious British troops to horror and to pity; to the weary half-starved enemy, whose disorganised masses had blackened the broad high-road during the past few days, the vision of the fate which might at any moment visit them must have brought a terror which eclipsed even the bitterness of defeat. For mile after mile the road was flanked with wreckage of troops and transport, shattered guns and waggons, the mangled remains of drivers intermingled with those of the horses, corpses of infantrymen riddled by machine-gun fire.<sup>73</sup>

Major-General J.F. Gathorne-Hardy, who had been Brigadier-General, General Staff, of the British XIV Corps, also gave an account of the campaign after the war. He noted that on 29 and 30 October the RAF expended thirty thousand rounds of ammunition and three-and-a-half tons of bombs upon targets on the Conegliano-

Pordenone road. 'Subsequent examination of the road almost forced the observer to the conclusion that this form of warfare should be forbidden in future.'<sup>74</sup> The tactics which produced scenes like these would be all too familiar to another generation, but they rapidly disappeared from the memory, and the repertoire, of the post-1918 RAF.

In Macedonia the war reached its climax a month earlier than in Italy. The final offensive had been planned by *Général Franchet d'Espérey*, who had succeeded to the overall command in June 1918. He gave the leading role to the Serbs and assigned to those hardy mountaineers the breaching of the Moglena range. So lofty and forbidding were these heights that the Bulgarians had neglected to fortify them heavily, yet if they could be passed an invader could lay his hands upon the main line of communications and collapse the whole of the front. The French were to attack on either side of the Serbian armies, while the Italians on the left and the Greeks on the far right had as their chief task the holding of the enemy in order to prevent reinforcement of the centre. The British were to attack between the Vardar and Lake Doiran.<sup>75</sup>

The Serbian attack began in the early hours of 15 September, and within two days a blunt wedge twenty-five miles wide and six miles deep had been driven into the enemy front. The British, attacking the sector RAF pilots deemed the strongest on the whole front, took heavy losses for slight gains. During this attack, on the 18th and 19th, the corps squadrons carried out contact patrols and low-level strafing, while the fighter pilots took part in a final dogfight with their German opponents, 'the last encounter of its kind on the British Macedonian front.' While leading his flight of SE5as Captain Gordon Bell caught sight of twelve Fokkers over Cestovo. 'The leader of hostile formation was attacked by Capt. Bell head on at close range,' Bell's report states. 'E.A. did an Immelmann turn in front of S.E. D3495. After short burst E.A. centre section burst into flames.' A pilot from 47 Squadron saw the crash of the last enemy aircraft to be destroyed on this front.<sup>76</sup>

Meanwhile, west of the Vardar, the Serbs and French were rapidly exploiting their breakthrough. On the morning of 21 September RAF machines brought back word that the enemy had begun to retreat all along the line, including the British sector. Not a German plane could be found in the sky, the hangars at Hudova airfield had disappeared, and the rear areas were dotted with burning dumps of material. It was a situation precisely similar to that on the Piave front little more than a month later, though not quite on the same scale. And as they were to do in Italy, RAF machines took full advantage of the opportunity to harry the retreating enemy. According to the historical report submitted by 16 Wing shortly after the end of operations, 'the retreating troops and transport were followed up from the time the retirement started.'

The roads running north from Rabrovo, Kosturino [sic], Strumica and Jenikoj were seen to be black with traffic, and were bombed continuously by our machines. As soon as the machines had dropped their load of bombs and expended their ammunition they returned immediately to the aerodrome two and three times for fresh supplies, everyone showing the greatest keenness, and the fullest advantage was taken of these exceptional targets. During