### TABLE 22
Fatal and non-fatal casualties by year

<table>
<thead>
<tr>
<th></th>
<th>1915</th>
<th>1916</th>
<th>1917</th>
<th>1918</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
<td>80</td>
<td>387</td>
<td>897</td>
<td>1372</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>75</td>
<td>339</td>
<td>682</td>
<td>1112</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>27</td>
<td>113</td>
<td>228</td>
<td>370</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>26</strong></td>
<td><strong>182</strong></td>
<td><strong>839</strong></td>
<td><strong>1807</strong></td>
<td><strong>2854</strong></td>
</tr>
</tbody>
</table>

### TABLE 23
Percentage of each type of casualty by year

<table>
<thead>
<tr>
<th></th>
<th>1915</th>
<th>1916</th>
<th>1917</th>
<th>1918</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.6</td>
<td>5.8</td>
<td>28.2</td>
<td>65.4</td>
</tr>
<tr>
<td>2</td>
<td>1.4</td>
<td>6.7</td>
<td>30.5</td>
<td>61.3</td>
</tr>
<tr>
<td>3</td>
<td>.5</td>
<td>7.3</td>
<td>30.5</td>
<td>61.6</td>
</tr>
</tbody>
</table>

### TABLE 24
Percentage of each year's casualties by type

<table>
<thead>
<tr>
<th></th>
<th>1915</th>
<th>1916</th>
<th>1917</th>
<th>1918</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30.8</td>
<td>44.0</td>
<td>46.1</td>
<td>49.6</td>
</tr>
<tr>
<td>2</td>
<td>61.5</td>
<td>41.2</td>
<td>40.4</td>
<td>37.7</td>
</tr>
<tr>
<td>3</td>
<td>7.7</td>
<td>14.8</td>
<td>13.5</td>
<td>12.6</td>
</tr>
</tbody>
</table>

1. Killed and missing
2. Wounded and injured
3. POW and interned

Total \( \chi^2 = 10.0 \)  
Critical \( \chi^2 .001 \) (6df) = 22.5

significant figure here, these do serve to show the steadily increasing scale of the air war, and the increasing price that Canadians were paying in it.

Table 25 is an analysis of RFC and RAF casualties in the programme as a proportion of the total RFC/RAF casualties.* Even allowing for the incomplete nature of

* It is obvious that the total RFC/RAF casualty figure for prisoners is very low for 1918, and it is suspected that these figures, probably made up in the last days of the war, contain many individuals among the Missing who subsequently turned up as prisoners. A more complete total showed 8136 killed, died, or presumed dead and 7245 wounded and injured. 'Casualties, R.F.C.-R.A.F.; August 1914-Oct., 1918,' nd. Air 1/39/15/7; 'Compiled by Royal Canadian Air Force, Liaison Office, Air Ministry, London, England, and copied from H.O. 1044-3-5,' 25 July 1935, GAQ 10-20]. PAC, RG 24, vol. 1839
Canadians in the British Flying Services

**TABLE 25**
Casualties in the computer file as a proportion of total RFC/RAF casualties

<table>
<thead>
<tr>
<th></th>
<th>1914</th>
<th>1915</th>
<th>1916</th>
<th>1917</th>
<th>1918*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RFC/RAF casualties</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Killed &amp; missing</td>
<td>14</td>
<td>129</td>
<td>604</td>
<td>2053</td>
<td>5105</td>
<td>8355</td>
</tr>
<tr>
<td>Wounded &amp; injured</td>
<td>15</td>
<td>127</td>
<td>612</td>
<td>2369</td>
<td>3690</td>
<td>6813</td>
</tr>
<tr>
<td>POW &amp; interned</td>
<td>8</td>
<td>76</td>
<td>202</td>
<td>544</td>
<td>263</td>
<td>1093</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>37</td>
<td>332</td>
<td>1418</td>
<td>5416</td>
<td>9058</td>
<td>16,261</td>
</tr>
</tbody>
</table>

**RFC/RAF Canadian casualties in computer file**

<table>
<thead>
<tr>
<th></th>
<th>1914</th>
<th>1915</th>
<th>1916</th>
<th>1917</th>
<th>1918*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Killed &amp; missing</td>
<td>5</td>
<td>57</td>
<td>264</td>
<td>659</td>
<td>985</td>
<td>20</td>
</tr>
<tr>
<td>Wounded &amp; injured</td>
<td>13</td>
<td>59</td>
<td>276</td>
<td>645</td>
<td>993</td>
<td>138</td>
</tr>
<tr>
<td>POW &amp; interned</td>
<td>2</td>
<td>22</td>
<td>89</td>
<td>217</td>
<td>330</td>
<td>629</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>20</td>
<td>138</td>
<td>629</td>
<td>1521</td>
<td>2308</td>
<td>629</td>
</tr>
</tbody>
</table>

**Computer file casualties as percentage of total casualties**

<table>
<thead>
<tr>
<th></th>
<th>1914</th>
<th>1915</th>
<th>1916</th>
<th>1917</th>
<th>1918*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Killed &amp; missing</td>
<td>3.9</td>
<td>9.4</td>
<td>10.5</td>
<td>12.9</td>
<td>11.8</td>
<td>6.0</td>
</tr>
<tr>
<td>Wounded &amp; injured</td>
<td>10.2</td>
<td>9.6</td>
<td>11.7</td>
<td>17.5</td>
<td>14.6</td>
<td>9.7</td>
</tr>
<tr>
<td>POW &amp; interned</td>
<td>2.6</td>
<td>10.9</td>
<td>16.4</td>
<td>82.5</td>
<td>30.2</td>
<td>11.6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>6.0</td>
<td>9.7</td>
<td>11.6</td>
<td>16.8</td>
<td>14.2</td>
<td>11.6</td>
</tr>
</tbody>
</table>

* Figures for November 1918 are not included.

the totals, an increasing degree of Canadianization of the flying services is suggested by the increasing proportion of Canadian casualties, 6.0 per cent in 1915, 9.7 per cent in 1916, 11.6 per cent in 1917, and 16.8 per cent in 1918.

**CONCLUSION**

The reader must be well aware of the shortcomings of the statistical generalizations made from this computerized inventory. The entries represent neither a total population nor a random sampling, but rather a largely complete listing, with observed shortcomings in certain areas. For this reason, by no means all the data have been presented here, for large numbers of unknowns or clearly biased fields have made numbers of possible analyses valueless. What have been discussed here are results which, given the qualifications which have been stated, are seen as having some utility in statistically describing the nature of Canada’s contribution to the First World War through Canadian volunteers to the British flying services.
CHAPTER 1: MILITARY AVIATION BEFORE THE FIRST WORLD WAR


2 F.H. Hitchins, ‘Pin Points in the Past,’ *Roundel*, viii, June 1956, 24–5; *Royal Engineers Journal*, xv, 1 May 1885, 114; xv, 1 June 1885, 119; xxx, 1 Feb. 1900, 21; xxxi, 1 Nov. 1901, 195; xxxii, 1 April 1902, 51–6


5 The Royal Aero Club of the United Kingdom, *Year Book*, 1920–21–22–23 (London nd), 98–103


8 *Flight*, 29 May 1909, 308; Raleigh, *War in the Air*, i, 159


12 Raleigh, *War in the Air*, 1, 199–201


19 W.F. Reid, 'The Use of Explosives in Aerial Warfare,' *Journal of the Royal United Service Institution*, L V, June 1911, 735–49; *Flight*, 9 July 1910, 531; 26 Aug. 1911, 748; 11 Nov. 1911, 989; 27 April 1912, 380; 8 June 1912, 518; 9 Nov. 1912, 1035; 23 Nov. 1912, 1091; 7 Dec. 1912, 1137; 25 Jan. 1913, 89


23 MGO to Militia Council, 26 April 1909, HQ 6978–2–2, PAC. RG 24, vol. 2034

24 Secretary, Militia Council, to MGO, 5 May 1909, ibid.

25 *Evening Journal* (Ottawa), 29 March 1909, 6, 10; Parkin, *Bell and Baldwin*, 274–311
26 Grey to Crewe, 11 March 1909, HQ 6978-4, PAC. RG 24, vol. 2047; submission to Militia Council, 4 May 1909, HQ 6978-2-2, ibid., vol. 2034

27 Minutes of the Militia Council, May 4, 1909 (Ottawa 1909); Fiset to Bell, 7 May 1909, Baldwin and McCurdy to Secretary, Militia Council, 14 May 1909, HQ 6978-4, PAC. RG 24, vol. 2047

28 McCurdy to Secretary, Militia Council, 8 June 1909, Maunsell to Bogart, 14 June 1909, HQ 6978-4, PAC. RG 24, vol. 2047

29 Bogart to Director of Engineer Services, 19 June 1909, minute of MGO, 22 June 1909, ibid.; Green, Silver Dart, x, 107-9; A.J. Kerry and W.A. McDill, The History of the Corps of Royal Canadian Engineers (Ottawa 1962), 1, 56

30 Evening Journal, 26 July 1909, 1; News (Toronto), 26 July 1909, 1; 6 Aug. 1909, 1-2; 7 Aug. 1929, 1

31 Bogart to Director of Engineer Services, 6 Aug. 1909, HQ 6978-4, PAC. RG 24, vol. 2047; Winnipeg Telegram, 3 Aug. 1909, 1; Toronto Star, 3 Aug. 1909; Globe (Toronto), 3 Aug. 1909

32 Evening Citizen (Ottawa), 12 Aug. 1909, 1; Maunsell to MGO, 15 Aug. 1909, HQ 6978-4, PAC. RG 24, vol. 2047

33 Evening Citizen, 12 Aug. 1909, 1

34 Ibid.

35 Evening Citizen, 13 Aug. 1909, 3; Maunsell to MGO, 15 Aug. 1909, HQ 6978-4, PAC. RG 24, vol. 2047

36 Saturday Evening Citizen (Ottawa), 14 Aug. 1909, 1

37 McCurdy to Maunsell, 21, 28, 30 Oct. and 2 Nov. 1909, Maunsell to McCurdy, 6 Nov. 1909, HQ 6978-4, PAC. RG 24, vol. 2047

38 Canada, Parliament, House of Commons, Debates, 25 Nov. 1909, col. 446

39 Ibid., 13 Dec. 1909, 1369

40 Lohner biographical file, DHist

41 Evening Journal, 14 March 1910, 1

42 Lohner biographical file, DHist

43 MGO to McCurdy and Baldwin, 3 March 1910, Baldwin and McCurdy to Secretary, Militia Council, 3 March 1910, Maunsell, 'Notes on Aerodrome Flights,' 17 March 1910, HQ 6978-4, PAC. RG 24, vol. 2047

44 Baldwin and McCurdy to Secretary, Militia Council, 10 March 1910, Maunsell to MGO, 21 March 1910, ibid.

45 'Summary of Report of the Director of Engineer Services on his Visit to the Canadian Aerodrome Company of Baddeck, N.S.,' 29 March 1910, MGO to Secretary, Militia Council, 21 March 1910, ibid.

46 Minutes of the Militia Council, April 5, 1910; Minister of Militia and Defence to Governor General, 7 April 1910, HQ 6978-4, PAC. RG 24, vol. 2047

47 Fiset minute, 26 April 1910, MGO to Fiset, 7 May 1910, Fiset minute, 9 May 1910, Minister to Council, 16 May 1910, Maunsell to McCurdy and Baldwin, 10 June 1910, Fiset to McCurdy and Baldwin, 16 June 1910, ibid.; Minutes of the Militia Council, May 10, 1910

48 Maunsell to MGO, 29 Aug. 1910, minute of Secretary, Militia Council, 17 Sept. 1910, McCurdy to Maunsell, 29 Aug. 1910, Maunsell to McCurdy, 1 Sept. 1910, HQ 6978-4, PAC. RG 24, vol. 2047
CHAPTER 2: RECRUITING AND TRAINING IN CANADA, 1914-16

1 Globe (Toronto), 26 July 1909, 1–2; Evening Citizen (Ottawa), 26 July 1909, 1, 7; 10 Aug. 1909, 5; Le Soleil (Québec), 26 July 1909, 1; 27 July 1909, 1; Manitoba Free Press, 4 July 1914, Women’s Section, 3; ‘Come Josephine ...’ was copyrighted in 1910.

2 See, for example, Le Soleil, 29 July 1909, 4; 31 July 1909, 1; C.F. Winter, Lieutenant-General the Hon. Sir Sam Hughes, K.C.B., M.P.: Canada’s War Minister 1911–1916 (Toronto 1931), 104–5.

3 PC 2389, 17 Sept. 1914

4 Evening Citizen, 15 Feb. 1915, 1; Globe, 15 Feb. 1915, 1; 16 Feb. 1915, 1–2

5 Daily Mail and Empire (Toronto), 16 Feb. 1915, 10


7 Maunsell minute, 14 Nov. 1914, Gwatkin minute, 18 Nov. 1914, Maunsell to Kennedy, 19 Nov. 1914 and generally, ibid.

8 Gwatkin minute, 3 Sept. 1914, HQ 6978–2–62, vol. 1, ibid., vol. 2031; F.H. Ellis, Canada’s Flying Heritage (Toronto 1954), 43


10 HQ 6978–2–64, ibid., vol. 2037

11 Quoted in Gwatkin to Under-Secretary of State for External Affairs, 16 Sept. 1914, ibid.


13 Janney to OC. CEF, Bustard Camp, Salisbury Plain, PAC. RG 9 III, vol. 381; Adjutant-General to Alderson, 20 Nov. 1914, Deputy Minister of Militia to Governor General, 28 Dec. 1914, HQ 593–2–46, PAC. RG 24, vol. 488


15 F.H. Hitchins, ‘Recruiting in Canada for the R.F.C.,’ 1–2, Hitchins Papers, DHist 75/514, file d10
17 McCurdy to Borden, 22 Dec. 1914, 3 Feb. 1915. Borden to McCurdy, 6 Feb. 1915, Christie to McCurdy, 18 March 1915, McCurdy Papers, DHist 76/253, files 1 and 2; Governor General to Secretary of State for the Colonies, 6 Feb., 3 March 1915, Secretary of State for the Colonies to Governor General, 15 March 1915, GAQ 10-20K, PAC RG 24, vol. 1839
18 Deputy Minister, DNS, to Deputy Minister of Militia, 16 April 1915, HQ 6978-2-92, vol. 1, PAC RG 24, vol. 2032; Hitchins, 'RNAS Recruiting 1915,' 1, Hitchins Papers, DHist 75/514, file D3
19 'Regulations for Special Entry in Canada into the Royal Naval Air Service,' DHist 112AH.001 (D3)
20 Daily Mail and Empire, 11 May 1915, 4; Curtiss School logbook, PAC MG 28 III 65
21 Hitchins, 'Recruiting ... for the R.F.C.,' 4-6; Logan to RCAF Historical Section, 17 March 1962, DHist 112AH.001 (D3)
22 Quoted in Hitchins, 'Recruiting ... for the R.F.C.,' 7-8
23 Curtiss logbook, PAC MG 28 III 65; Hitchins, 'Recruiting ... for the R.F.C.,' 8; Ross-Hume to MA 1, 16 Sept. and reply of same date, Air 2/13/058/4047
24 Governor General to Secretary of State for the Colonies, 6 Oct. 1915, Secretary of State for the Colonies to Governor General, 10 Nov. 1915, Air 1/656/17/122/552; Globe, 14 Sept. 1915, 6; 25 Oct. 1915, 3; 7 Nov. 1915, 8; 16 Nov. 1915, 6; 18 Nov. 1915, 7; Curtiss logbook, PAC MG 28 III 65; interview with Air Marshal Robert Leckie, May 1964; Henderson to Stanton, 19 Nov. 1915, Air 2/13/058/4047; War Office to Governor General, 18 Nov. 1915, HQ 6978-2-92, vol. 3, PAC RG 24, vol. 2032
26 Kingsmill to Commanding Officer, HMCS Niobe, 22 Nov. 1915, NSS 40-3-2, PAC RG 24, vol. 5636; Niobe pay ledgers, PARC; R. Collishaw, 'Canadian Volunteers and the Royal Naval Air Service,' DHist 112AH.001 (D3); Secretary, DNS, to RNAS candidate, 22 Nov. 1915, ibid.
27 Quoted in Hitchins, 'Recruiting ... for the R.F.C.,' 9
28 Air 2/13/058/4066
29 Burke to Marindin, 19 Dec. 1915, ibid.
30 Goldney to McCurdy, 24 June 1916, McCurdy Papers, DHist 76/253, file 3
31 War Office to Colonial Office, 9 Feb. 1916, Air 2/13/058/4066
33 Globe, 13 May 1916, 5; Curtiss logbook, PAC MG 28 III 65
34 Canada, Department of the Naval Service, Report ... for the Fiscal Year ending March 31, 1919 (Sessional Paper no 39; Ottawa 1920); 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), 459; Navy List, 1916, 11, 965
35 ‘Regulations for the Special Entry in Canada of Officers and Men for the Royal Flying Corps, Military Wing,’ HQ 6978-2-62, vol. 1, PAC. RG 24, vol. 2031; Brancker to Stanton, Aug. 1916 and enclosure, Air 2/9/87/8060
36 Robert Laird Borden, Robert Laird Borden: His Memoirs, Henry Borden, ed. (Toronto 1938), ii, 603-4; Borden to Foster, 14 July 1916, Perley Papers, PAC. MG 27 II D 12, vol. 5; Globe, 20 March 1916, 9
37 Hitchins, ‘Recruiting ... for the R.F.C.,’ 18-20; Warner to Innis-Ker, 17 Nov. 1916, confirming cable of 15 Nov. 1916, Air 2/9/87/8060
39 Globe, 11 Aug. 1916, 6; City of Toronto Council minutes, 1918, App. A, 933; City of Toronto, unpublished statement of year-end summaries (receipts and disbursements); PC 1008, 1 May 1915; Curtiss logbook, PAC. MG 28 III 65
40 It is not possible to give a specific reference or references to support these figures. They are based, inter alia, on the following sources: Canada, Parliament, House of Commons, Debates, 27 May 1919, 2969; HQ 6978-2-92, vols. 1-6, PAC. RG 24, vols. 2032-3; Canada, Overseas Military Forces of Canada, Report of the Ministry: Overseas Military Forces of Canada, 1918 (London nd), 345-7; Curtiss logbook, PAC. MG 28 III 65; RFC-RNAS Recruiting in Canada, DHist 112 AH.001 (D3)
41 Globe, 15 May 1915, 23
42 Marindin to Merritt, 18 Feb. 1916, Merritt to Gwatkin, 16 Sept. 1916, HQ 6978-2-125, PAC. RG 24, vol. 2039; Montreal Herald and Daily Telegraph, 8 Sept. 1916, 3; Stanton to Brancker, 18 Aug. 1916, Air 2/9/87/8060
43 Secretary, Canadian Aircraft Works, to Department of Militia, 7, 21 Nov. 1914, HQ 6978-2-80, PAC. RG 24, vol. 2037
44 Toronto World, 2 April 1915, 1-2; 14 April 1915, 6; 6 May 1915, 1-2; Ellis, Canada’s Flying Heritage, 113-18
46 Breadner to his father, [October 1915], Breadner Papers, DHist 74/707, folder A, file 2
48 Ibid.; Carter to Dodds, 10 April 1963, Carter Papers, DHist 76/137, file A2
51 Imperial Munitions Board to Ministry of Munitions, 9, 24 May 1916, Air 2/127/812062; ‘Memorandum on Development of the Royal Flying Corps in Canada,’ Air 2/166/RU4527; Hitchins, ‘Aircraft Construction in Canada,’ 11, Hitchins Papers, DHist 75/514, file D9
52 Toronto World, 15 March 1916, 6
CHAPTER 3: SIR SAM HUGHES, THE AVIATION LOBBY, AND CANADIAN AIR POLICY, 1914-16

3 Gwatkin to Bennett, 2 Dec. 1914, Gwatkin Papers, PAC. MG 30 E 51
4 McCurdy to Hughes, 21 Dec. 1914, McCurdy Papers, DHist 76/253, file 1
5 McCurdy to Borden, 22 and 30 Dec. 1914, 3 Feb., 16 April 1915, Borden to McCurdy, 6 Feb. 1915, ibid., files 1 and 2; Governor General to Secretary of State for the Colonies, 6 Feb., 3 March 1915, Secretary of State for the Colonies to Governor General, 15 March 1915, GAQ 10-20K, PAC. RG 24, vol. 1839
7 F.H. Hitchins, 'Dominion Squadrons, 1915-1918,' 1-2, Hitchins Papers, DHist 75/514, file D1. While serving as a member of the RCAF Historical Section during the Second World War, Dr Hitchins had access to a number of Air Historical Board files which were subsequently destroyed.
8 Under-Secretary of State, Colonial Office, to Secretary, Office of the High Commissioner for Canada, 18 Sept. 1915, enclosing War Office proposal of 10 Sept. 1915, C-9-91, PAC. RG 25, vol. 151
10 Merritt to Borden, 20 March 1916, HQ 6978-2-125, PAC. RG 24, vol. 2039;
Montreal Herald and Daily Telegraph, 8 Sept. 1916, 3
11 Quoted in Merritt to Borden, 20 March 1916, HQ 6978-2-125, PAC. RG 24, vol. 2039
12 Marindin to Merritt, 18 Feb. 1916, ibid.
13 Kemp to Gwatkin, 31 March 1916, ibid.
14 Toronto World, 29 March 1916, 6
15 Merritt to Borden, 20 March 1916, HQ 6978-2-125, PAC. RG 24, vol. 2039
16 Gwatkin to Stanton, 7 April 1916, Militia Council minutes, 19 April 1916, Stanton to Gwatkin, 27 April 1916, Borden to Merritt, 28 April 1916, Gwatkin to Adjutant-General, 13 May 1916, ibid; PC 1008, 1 May 1916
17 Canada, Parliament, House of Commons, Debates, 14 April 1916, 2895-6, 2898-900
18 Toronto Star, 8 April 1916, 10
19 Ibid., 1 Sept. 1916, 8; Toronto World, 12 June 1916, 6; 7 Sept. 1916, 6; 26 Sept. 1916, 6; 3 Oct. 1916, 6
(Toronto 1917), 301; Hearst to Borden, 12 Oct. 1916, Borden Papers, PAC. MG 26 H, vol. 74, 38631-2
21 Merritt to Gwatkin, 16 Sept. 1916, HQ 6978-2-125, PAC. RG 24, vol. 2039
22 Gwatkin to Merritt, 5 Sept. 1916, ibid.
23 Newspaper clipping (unidentified), c March 1916, Dinnick to Harvey, 2 Oct. 1916, Air 2/127/b12062; Hopkins, *Canadian Annual Review*, 1916, 301
24 Dinnick to Air Board, 5 June 1916, Air 2/127/b12062
25 Dinnick to Henderson, 8 May 1916, ‘Building Aeroplanes at Cost, Toronto, Canada,’ 13 May 1916, ibid.
26 Brand to Perry, 27 April 1916, Perry to Brand, 5 May 1916, ibid.
28 Perry to Brand, 9 May 1916, Air 2/127/b12062
29 Perry to Brand, 27 May 1916, ibid.
30 Brand to Perry, 15 and 23 May 1916, ibid.; Borden to Perley, 19 May 1916, Borden Papers, PAC. MG 26 H, vol. 74, 38566
31 Perry to Brand, 24 May 1916, Air 2/127/b12062
32 Perry to Brand, 25 May 1916, ibid.
33 McCurdy to Kemp, 23 March 1916, McCurdy Papers, DHist 76/253, file 3
34 McCurdy to Desbarats, 12 April 1916, ibid.; Borden to Perley, 11 April 1916, P-5-94, PAC. RG 25, vol. 267
35 Perley to Borden, 4 May 1916, Borden Papers, PAC. MG 26 H, vol. 74, 38567
36 Perley to Borden, 8 May 1916, ibid., 38564-5
37 Gwatkin to Christie, 9 May 1916, Gwatkin Papers, PAC. MG 30 E 51
38 Memorandum [Christie to Borden], 15 May 1916, Borden Papers, PAC. MG 26 H, vol. 74, 38568-70
39 Borden to Perley, 19 May 1916, Perley to Borden, 22 May 1916, ibid., 38566, 38571-3
40 Brand to Curzon, 25 May 1916, Harvey, ‘Notes of Meeting with Brand,’ 26 May 1916, McCurdy to Curzon, 26 May 1916, Harvey, ‘Notes of Interview with McCurdy,’ 30 May 1916, Stanley to Baird, 31 May 1916, Air 2/127/b12062
41 Baird to Sydenham, 2 June 1916, McCurdy to Harvey, 6 June 1916, Baird to Sydenham, 6 June 1916, ibid.; Gordon Bruce, ‘Canadian Flying Corps; Offer to the Air Board,’ *Daily Mail* (London), 3 June 1916, clipping in P-5-94, PAC. RG 25, vol. 267
42 Baird to Sydenham, 2 June 1916, Harvey, ‘Canadian School of Aviation and Factory,’ June 1916, Air 2/127/b12062
43 Admiralty to Air Board, 16 June 1916, War Office to Treasury, 27 June 1916, Brancker to Harvey, 30 June 1916, Brancker to DFS, 30 June 1916, Treasury to Air Board, 30 June 1916, Treasury to War Office, 4 July 1916, ibid.
44 Air Board minutes, 7 July 1916, ibid.
45 Brand to Harvey, 8 July 1916, Brand to Flavelle, 9 July 1916, Perry to Borden, 18 July 1916, ibid.
46 Harvey to Curzon, 5 Aug. 1916, ibid.; White to Borden, 19 July 1916, Borden Papers, PAC. MG 26 H, vol. 74, 38565A
47 Bonar Law to Governor General, 11 Aug. 1916, ibid., 38587
49 Ibid.; [memorandum of meeting], 21 Aug. 1916, Borden Papers, PAC. MG 26 H, vol. 74, 385600
50 Kingsmill to Desbarats, 27 Aug. 1916, Air 2/127/B12062
51 Henderson to Perley, 20 June 1916, Perley to Borden, 22 June 1916, Borden Papers, PAC. MG 26 H, vol. 74, 38574, 38575
52 Kingsmill to Vaughan-Lee, 28 Aug. 1916, Air 2/127/B12062
53 Gordon to Brand and Perry, 29 Aug. 1916, Admiralty to Air Board, 29 Sept. 1916, ibid.
54 Minutes of 22nd meeting of Air Board, 24 Aug. 1916, Air 6/2; Sydenham minutes, 31 Aug. and 29 Sept. 1916, Harvey and Sydenham minutes, 2-5 Oct. 1916, Air 2/127/B12062
55 Canada, Department of National Defence, Official History of the Canadian Forces in the Great War, 1914-1919, 1: Chronology, Appendices and Maps (Ottawa 1938), 162, 229; Morden to Perley, 26 Jan. 1917, P-5-94, PAC. RG 25, vol. 267
56 Murphy to Hughes, 12 April 1916, 8-1-104, PAC. RG 9 III, vol. 35
58 Carson to Hughes, 20 and 29 April 1916, Hughes to Carson, 20 April 1916, ibid.
59 McCurdy to Borden, 10 July 1916, Morden, ‘Draft Proposals for Canadian Air Service,’ nd, McCurdy Papers, DHist 76/253, file 3
60 Morden to Hughes, 26 June 1916, ibid.
61 McCurdy to Harvey, 21 June 1916, Harvey, ‘Notes to “Draft Proposals for Canadian Air Service.”’ nd, Brancker, ‘Comments on Draft Proposals,’ 24 June 1916, Air Board minutes, 7 July 1916, Harvey to Morden, 10 July 1916, Air 2/127/B12062; Borden to Perry, 23 June 1916, Borden Papers, PAC. MG 26 H, vol. 74, 38578
62 McCurdy to Morden, 11 and 25 July 1916, McCurdy Papers, DHist 76/253, file 3
63 Morden to McCurdy, 3 and 10 Aug. 1916, ibid.
64 Gazette (Montreal), 23 Aug. 1916, 16
65 ‘Minutes of Conversation Held with Representatives of Canada, Australia and South Africa,’ 26 Aug. 1916, Hitchins Papers, DHist 75/514, file B1
66 ‘Seating Plan for Dinner given by Grant Morden,’ 29 Aug. 1916, Morden to McCurdy, 4 Sept. 1916, McCurdy Papers, DHist 76/253, file 3
68 Gordon to Perry, 24 Sept. 1916, Air 2/127/B12062
69 Perry to Gordon, 28 Sept. 1916, ibid.
70 Gordon to Hazen, 4 Oct. 1916, Hazen to Borden, 5 Oct. 1916, Borden Papers, PAC. MG 26 H, vol. 74, 38619-21
71 McCurdy to Hughes, 9 Oct. 1916, McCurdy Papers, DHist 76/253, file 3
CHAPTER 4: RFC EXPANSION AND THE CANADIAN AIR TRAINING ORGANIZATION

2 Allen to RCAF Historical Section, 20 Sept. 1962, DHist 76/199
3 Hoare to Allen, 27 Nov. 1962, ibid.
5 Air 1/721/48/4; Hoare to DAO, 28 Jan. 1917, Air 1/721/48/5
6 Air 1/721/48/4
9 ‘Memorandum on Development of the Royal Flying Corps in Canada, App. A,’ nd, Air 1/721/48/4
14 Sullivan, *Aviation in Canada*, 261–5; Air 1/721/48/4
15 Sullivan, *Aviation in Canada*, 251–5
16 Ibid., 72, 256–8
17 Ibid., 275–6
18 Ibid., 280–3
19 Air 1/721/48/4
21 Ibid.; Ingoldsby to Fletcher, 10 July 1919, Curtiss Engineering Corporation, re JN4 nomenclature, 14 July 1919, DHist 76/290
22 Caddell to Hoare, 8 Feb. 1917, Hoare to Charlton, 27 March 1917, Air 1/721/48/5; F.H. Hitchins, 'Canadian Aeroplanes Limited,' Hitchins Papers, DHist 75/514, file G21
24 Air 1/721/48/4
27 Hoare to Charlton, 4 Feb. 1917, Air 1/721/48/5; Allen to RCAF Historical Section, 5 Dec. 1962, DHist 76/199
29 Hoare to Charlton, 15 Feb., 27 March 1917, War Office to Governor General, 21 March 1917, Charlton to Hoare, 31 March 1917, Air 1/721/48/5
30 Hoare to Charlton, 4 May 1917, ibid.; Sullivan, Aviation in Canada, 180, 183
31 Hoare to Charlton, 4 May, 15 June 1917, Air 1/721/48/5; Air 1/721/48/4; Sullivan, Aviation in Canada, 162
32 Sullivan, Aviation in Canada, 156, 159, 162, 165
34 Hoare to DAO, 6 June 1917, Hoare to Charlton, 25 April 1917, Air 1/721/48/5; Air 1/721/48/4
37 Air 1/721/48/4: Allen to Charlton, 26 May 1917, Air 1/721/48/5; Sullivan, *Aviation in Canada*, 141, 142, 149
38 RFC recruiting material (Newfoundland), ‘Flying Corps – General,’ PARC box 490010, file M-25; *Daily Mail and Empire* (Toronto), 13 Feb. 1917, 7
39 Hoare to Charlton, 26 Dec. 1916, 20 April, 4 and 11 May 1917, Charlton to Hoare, 11 April 1917, Hoare to Drew, 26 Dec. 1917, Air 1/721/48/5
40 Foreign Office to Army Council, 31 Aug. 1914, CO 616/12
42 Hoare to Charlton, 1 June 1917, Air 1/721/48/5
43 Hoare to War Office, 30 May 1917, ibid.
44 Hoare to Charlton, 1 June 1917, ibid.
45 Hoare to Charlton, 15 and 30 June, 28 Sept. 1917, ibid.
46 Hoare to Charlton, 30 June 1917, ibid.
47 Charlton to Hoare, 29 June 1917, Hoare to Charlton, 17 July, 26 Sept. 1917, 6 Feb. 1918, ibid.
48 Allen to Charlton, 13 April 1917, Hoare to Charlton, 20 and 25 April 1917, ibid.; Hoare to Allen, 27 Nov. 1962, Allen to RCAF Historical Section, 5 Dec. 1962, DHist 76/199; Hiram Bingham, *An Explorer in the Air Service* (New Haven 1920), 11–22
50 Hoare to War Office, 30 May 1917, Hoare to Charlton, 15 June 1917, Air 1/721/48/5; Hoare to War Office, 4 June 1917, War Office to Hoare, 8 June 1917, Air 2/166/RU4867
51 Hoare to War Office, 15 and 27 June 1917, War Office to Hoare, 28 June 1917, ibid.; Hoare to Charlton, 30 June 1917, Air 1/721/48/5
52 Hoare to War Office, 27 June 1917, Air 2/166/RU4867
53 Hoare to Allen, 27 Nov. 1962, DHist 76/199
54 Hoare to Squier, 12 July 1917, Hoare to Charlton, 17 July 1917, Squier to Hoare, 25 July 1917, War Office to Hoare, 23 July 1917, Air 2/166/RU4867; Hoare to Squier, 7 Jan. 1918, Air 2/166/RU4868; Roscoe to Chief Signal Officer, 6 May 1918, Air 2/166/RU4869
58 Hoare to Drew, 15 Nov., 9 and 26 Dec. 1917, Air 1/721/48/5; Air 1/721/48/4; Roscoe to Chief Signal Officer, 6 May 1918, Air 2/166/RU4869; Hoare to Squier, 7 Jan. 1918, Air 2/166/RU4868
60 Hoare to Squier, 5 Oct. 1917, 7 Jan. 1918, E.A. Deeds to Hoare, 25 Jan. 1918, Air 2/166/RU4868; Hoare to Roscoe, 5 April 1918, Roscoe to Chief Signal Officer, 6 May 1918, Air 2/166/RU4869; Hoare to Charlton, 22 Oct. 1917, Hoare to Chief Signal Officer, 5 Nov. 1917, Air 1/721/48/5; Sullivan, *Aviation in Canada*, 248
61 Sullivan, *Aviation in Canada*, 155-61, 288
62 Hoare to Charlton, 26 May 1917, Air 1/721/48/5; Air 1/721/48/4; Jones, *War in the Air*, v, 466n
63 Allen to RCAF Historical Section, 5 Dec. 1962, DHist 76/199; Sullivan, *Aviation in Canada*, 131
65 Air 1/721/48/4; Chief Recruiting Officer, RFC HQ, to MD 5, 30 Aug. 1917, MD 5 17-1-42 a, vol. 3, PAC, RG 24, vol. 4506
66 Chief Recruiting Officer, RFC HQ, to MD 5, 30 Aug. 1917, MD 5 17-1-42 a, vol. 3, PAC, RG 24, vol. 4506
67 Tompkins, ‘Report on R.F.C. School of Military Aeronautics No. 4 Toronto, Canada,’ (unpublished, Nov. 1917), DHist 112AH.001 (d7)
68 Allen to Drew, 2 Feb. 1918, Hoare to Drew, 6 Feb. 1918, Air 1/721/48/5; ‘Minutes of Final Meeting of the Supervisory Board, British Commonwealth Air Training Plan, 16 April 1945,’ App. 1, DHist 73/1558, vol. 10
70 Gibbard to RCAF Historical Section, 8 March 1962, DHist 76/288
71 Air 1/721/48/4; Sullivan, *Aviation in Canada*, 20, 54
73 Halstead, ‘Mission,’ 88
74 Ibid.
75 Allen to Bureau of Naval Operations, USNA. RG 72, copy in DHist 112 AH.001 (d6)
76 Times, (Orillia), 24 May 1917
77 Ibid, 28 June 1917
78 Gibbard to RCAF Historical Section, 8 March 1962, DHist 76/288
79 Sullivan, *Aviation in Canada*, 76-82, 197-202
80 Ibid., 89; Hoare to Charlton, 9 and 22 Oct. 1917, Air 1/721/48/5
82 'CFS Fighting Instruction Data No. 8,' Air 1/727/144/2; Smith-Barry, 'General Methods of Teaching Scout Pilots,' Air 1/728/163/3
83 Ibid.
84 Jones, War in the Air, v. 431
85 Burton to RCAF Historical Section, 10 May 1962, E.C. Burton biographical file, DHist
86 Jones, War in the Air, v. 430–1
87 Ibid., 430
88 Hoare to Drew, 26 March 1918, Air 1/721/48/5
89 Hoare to Air Ministry, 28 May 1918, ibid.; Sullivan, Aviation in Canada, 211–23
90 D. Clark, Wild Blue Yonder: an Air Epic (Seattle 1972), 42–4, 82; Cyprian Herbert Andrews biographical file, DHist; F.H. Ellis, Canada’s Flying Heritage (Toronto 1954), 128
91 Ellis, Canada’s Flying Heritage, 127
92 Halstead, ‘Mission,’ 88
93 RFC/RAF Canada, ‘Reports of Aeroplane Accidents Resulting in Injury or Death,’ 1917–18, Air 1/10/15/1/37
94 Sullivan, Aviation in Canada, 229
95 Ibid., 231; Department of National Defence, Air Service, ‘Final Report of the Chief of the Air Staff to the Members of the Supervisory Board of the British Commonwealth Air Plan, 16 April 1945,’ 40–1, DHist 033.013 (D2); Air 1/686/21/13/2252
97 Hoare to Brancker, 28 July 1918, Air 1/721/48/5
99 PC 1850, 27 July 1918; PC 2584, 23 Oct. 1918; PC 2658, 30 Oct. 1918. See also Militia Orders and instructions from Department of Justice in HQ 6978–2–131, vols. 6–9, PAC. RG 24, vols. 2042, 2043; and Military Service Sub-Committee, Militia Department to Military Service Branch, Department of Justice, 1 Nov. 1918, Denton to CGS, 31 Oct. 1918, HQ 6978–2–131, vol. 9, ibid.
100 Air Ministry to Minister of Militia, 23 Nov. 1918, ibid.
101 Air Council minutes, 40th meeting, 18 July 1918, Air 6/13; Air Ministry, ‘Proposals as to Canadian Units and for the Transfer of Training Units in Canada to Canadian Government,’ conference minutes, 29 July 1918, Air 2/109/A2271
102 Gibson, ‘The Taking Over by Canada of the RAF Organization in Canada,’ 2 Oct. 1918, Kemp Papers, PAC. MG 27 II D 9, vol. 143
104 Ross to DAO, 8 Aug. 1918, Drew to Secretary Air Council, 16 Aug. 1918, McAnally to Perley, 31 Aug. 1918, Air 2/109/A2271
105 Allen to RCAF Historical Section, 22 July 1962, DHist 76/199
106 Hoare to Brancker, 28 July, 15 Aug. 1918, Air 1/721/48/5

109 ‘RAF Units in Canada,’ Cadet Wing Review, 1, Dec. 1918, 8


112 Sullivan, Aviation in Canada, 151; ‘Strength of RAF in Various Theatres,’ 31 Oct. 1918, Air 1/2296/209/77/16; Globe, 23 Nov. 1918, 9; 26 Nov. 1918, 8; 9 Dec. 1918, 8; Toronto World, 14 Dec. 1918, 4; Seymour to RCAF Historical Section, 28 May 1962, Murton Adams Seymour biographical file, DHist; Hawksford to CGS, 10 June 1919, HQ 6978–2–131, vol. 10, PAC RG 24, vol. 2043

113 Sullivan, Aviation in Canada, 108–24; Air 1/721/48/4; PAC RG 24, vols. 2041, 2043

114 F.H. Hitchins, ‘Canada’s Pioneer Air Mail,’ Roundel, xi, June 1959, 18–22, R.K. Malott, ‘Who’ll Carry the Mail?’ Sentinel, iv, June 1968, 44–5; Ellis, Canada’s Flying Heritage, 136–9; R.K. Malott, ‘Toronto-Ottawa Airmail,’ CAHS Journal, vii, fall 1969, 84; Gazette (Montreal), 19 Nov. 1918, 4; 21 Nov. 1918, 5; 22 Nov. 1918, 4; 24 Nov. 1918, 7; 25 Nov. 1918, 9; Daily Mail and Empire, 22 June 1918, 22; 24 June 1918, 9; 25 June 1918, 4; Merritt to Borden, 26 Aug. 1918, Borden Papers, PAC MG 26 II, vol. 74, 38829

115 Molson, ‘The JN-4 (Can.),’ pt i; Carnegie, History of Munitions Supply, 189–90; Sullivan, Aviation in Canada, 47, 54


118 DAO to Air Board, biweekly reports of pilots graduating, Dec. 1916–March 1918, Air 1/131/15/40/222; Sullivan, ‘RAF Can. Output of Pilots and Observers,’ 75


120 Chambers to Allen, 28 Feb. 1918, HQ 6978–2–131, vol. 4, PAC RG 24, vol. 2041

121 Gwatkin to Allen, 4 March 1918, ibid.; Allen to RCAF Historical Section, 5 Dec. 1962, DHist 76/199

122 Toronto Star, 16 May 1918, 8

123 Ibid., 25 May 1918, 10
CHAPTER 5: ORIGINS OF NAVAL AIRPOWER

1 Correspondence between Air Department and Director of Transports on Grand Fleet seaplane carrier acquisition, 6 Sept. to 5 Oct. 1914, Air 1/631/17/122/36; Great Britain, Parliament, Parliamentary Papers, 1919, xxxiii, paper 200, ‘Navy Losses,’ 3; Sir Walter Raleigh, The War in the Air: being the Story of the Part played in the Great War by the Royal Air Force, I (London 1922), 367

2 Raleigh, War in the Air, I, 368; Churchill to CAS, 21 May 1919, Air 2/166/ MR 17724/7; Great Britain, Admiralty, History of the Development of Torpedo Aircraft (London 1919), 5

3 Great Britain, Admiralty Training and Staff Duties Division, Naval Staff Monographs (Historical), XII: Home Waters, Part III (London 1925), 133–9, 174. See also Sir Julian Corbett, Naval Operations, I: From the Battle of the Falklands to the Entry of Italy into the War in May, 1915 (London 1929), 52–3.


8 RN Air Station Westgate, report on air raid 16–17 May 1915, 18 May 1915, Air 1/295/15/226/143

9 ‘Air Raid on London on 31st May,’ Air 1/569/16/15/140

10 Jones, War in the Air, III, 106–7, 153–7

11 Davies, Sailor in the Air, 94; Samson, Fights and Flights, 3–14; Great Britain, Admiralty Training and Staff Duties Division, Naval Staff Monographs (Historical), XII: Home Waters, Part II (London 1924), 12–13, 153
13 Samson, Fights and Flights, 167–8; reports of attack on Friedrichshafen, 21 and 28 Nov. 1914, Air 1/671/17/128/2
14 Jones, War in the Air, II, 350–3; Robinson, Zeppelin in Combat, 77; Great Britain, Admiralty Training and Staff Duties Division, Naval Staff Monographs (Historical), XIII: Home Waters, Part IV ([London] 1925), 237; Longmore to DAD, 8 June 1915 and enclosures, Air 1/52/15/9/38; memorandum to DAD, ADAD, nd but c June 1915, ibid.
15 Davies, Sailor in the Air, 108–10; Samson, Fights and Flights, 144, 150–2; Davies telegram, 6 Nov. 1914, Air Department orders, 11 Nov. 1914, Samson to Sueter, 6 Dec. 1914, Air 1/671/17/128/2
16 Samson’s Despatch, 27 Nov. 1914, Air 1/671/17/128/2; Samson, Fights and Flights, 169–70, 184–5, 188
17 J.M. Bruce, British Aeroplanes, 1914–1918 (London 1957), 269; Penrose, British Aviation, 545–7; Samson Fights and Flights, 174–5, 182–3, 188–9; Samson to Admiralty, 6 Feb. 1915, cited in Samson, Fights and Flights, 191–4; Air Department orders, 11 Nov. 1914, Dunkirk reports, Nov. 1914, Air 1/671/17/128/2; Davies, Sailor in the Air, 113
18 Operations Order AD no 15, 21 June 1915, Air 1/147/15/73; Great Britain, Admiralty Training and Staff Duties Division, Naval Staff Monographs (Historical), VI: The Dover Command, I ([London] 1922), 23–5; ‘Anti-submarine Campaign,’ nd., 27–9, Air 1/675/21/13/1385; Longmore to DAS, 30 Sept. 1915, Air 1/149/15/95/2
19 Lambe to Bacon, 20 Aug., 11 Sept., 16 Nov. 1915, Air 1/69/15/9/112
20 Admiralty to Vice-Admiral, Dover, 13 Dec. 1915, ibid.
22 Beatty to Admiralty, 25 June 1915, Adm 137/2133, copy in Marder Papers, PRO 284, DHist M47; Fisher to Jellicoe, 28 Feb. 1915, in Fisher, Fear God and Dread Nought, III, 161
24 Jones, War in the Air, ii, 355
25 'R.N. Air Service,' Admiralty Monthly Orders, 542 (London, 1 October 1915, but effective 1 August 1915); Samson, Fights and Flights, 291; cf Higham, British Rigid Airship, 77–8 (his interpretation is based partly on a Sueter interview, 13 July 1959); Jones, War in the Air, ii, 381
26 Sykes to Admiralty, 9 July 1915, Air 1/669/17/122/788; Jones, War in the Air, ii, 24, 33–5; Great Britain, Admiralty Gunnery Division, Report of the Committee Appointed to Investigate the Attacks Delivered on and the Enemy Defences of the Dardanelles Straits, 1919 ([London] 1921), 94, 516
27 Report of the Committee... on... the Dardanelles, 94, 518, 520; Samson, Fights and Flights, 221–4; Sir Ian Hamilton, Gallipoli Diary (London 1920), i, 110–11; Hogg to War Office, 9 May 1915, Air 1/2119/207/72/2; Strain interview, 30 May 1923, Air 1/725/101/2; Gerrard, 'Personal Notes,' Air 1/2301/212/7
28 Report of the Committee... on... the Dardanelles, 30–1, 115–17, 177, 503–10; Hogg to War Office, 9 May, 10, and 25 June 1915, Air 1/2119/207/72/2; Kerby, 'War Experiences,' 19 Aug. 1922, Air 1/2386/228/11/10
29 Kerby, 'War Experiences'; Jones, War in the Air, ii, 64–5
30 Jones, War in the Air, ii, 57–8, 62–72; Gerrard, 'Personal Notes,' Air 1/2301/212/7; Kerby, 'War Experiences,' Air 1/2386/228/11/10, Report of the Committee... on... the Dardanelles, 206–9, 211
32 Samson, Fights and Flights, 278, 286; Jones, War in the Air, ii, 72–5
33 Enclosure on aeroplanes, nd, Air 1/649/17/122/422, Jones, War in the Air, v (London 1935), 370–1, 389–90
34 Jones, War in the Air, iii, 1–14; R.V. Dodds, 'The Königsberg Incident,' Roundel, xv, Nov. 1963, 12–14; H.J. Arnold biographical file, DHist
35 Jones, War in the Air, ii, 378–9
36 Davies to DAS, 26 Feb. 1916, Air 1/437/15/294/1

CHAPTER 6: 1916: DIFFUSION AND MISDIRECTION

3 Ireland to Director of Air Staff, 20 Dec. 1915, Air 1/659/17/122/615
5 Joint War Air Committee, extracts from paper Air 4, 3 March 1916, ibid., 309–10
6 Derby to Asquith, 3 April 1916, Air 1/2312/221/39
7 Balfour, ‘A Last Word on the Proposed Air Board,’ 8 May 1916, Air 1/2311/221/15
8 Trenchard’s notes regarding co-operation with the RNAS at Dunkirk in bombing operations, 25 Feb. 1916, Air 1/921/204/5/888; JWAC conclusions of 28 Feb. 1916, Haig to CIGS, 22 March 1916, Air 1/2265/209/70/1; JWAC conclusions of 6 March 1916, Air 1/270/15/226/115; RNAS return for period 16–31 Dec. 1916, Air 1/629/17/120
9 ‘Distribution of Airplane and Seaplane Flights,’ 20 April 1916, Air 1/146/15/61
10 Ibid.: Tudor minute, 21 March 1916, in Roskill, ed., Documents ... Naval Air Service, i, 333; RNAS return for period 16–31 Dec. 1916, Air 1/629/17/120
13 Flight Commander, 1 Wing to Senior Officer, RNAS Dover, 27 Jan. 1916, Air 1/630/17/122/31; Sir Reginald Bacon, The Dover Patrol, 1915–1917 (London nd), i, 92; Report of Flight Commander, 1 Wing, 1 Feb. 1916 in Dover Patrol, ii, 538–9
14 Owen Thetford, British Naval Aircraft since 1912 (London 1962), 66–7, 272–7
15 CORN Seaplane Station Dunkirk to so RNAS Dunkirk, 25 April 1916, Air 1/631/17/122/50; Jones, War in the Air, i (London 1928), 430–1
16 ‘Hornets of Zeebrugge,’ 13–14; 5 Wing general reports, Dover/Dunkirk, late April 1916, Air 1/39/15/9/4; Tooke’s report, 2 May 1916, report of operations, 4 May 1916, Air 1/47/15/9/27
17 No 5 Wing, RNAS, raid on Ghistelles Aerodrome, special report, 19 May 1916, Air 1/64/15/9/85; C.F. Snowden Gamble, The Story of a North Sea Air Station: Being some Account of the Early Days of the Royal Flying Corps (Naval Wing) and of the Part Played Thereafter by the Air Station at Great Yarmouth and Its Opponents during the War, 1914–1918 (London 1928), 161
18 No 1 Wing fortnightly report, 14–27 May 1916, Air 1/39/15/9/4; Bacon to Commodore, Dunkirk, 31 May 1916, Air 1/71/15/9/125
19 Jones, The War in the Air, ii, 434
20 Quoted in ibid.
21 Deutschland, Marine Archiv, Der Krieg in der Nordsee, Band VI: Der Krieg in der Nordsee von Juni 1916 bis Frühjahr 1917, by Walter Gladisch (Der Krieg zur See 1914–1918; Berlin 1937), 214, DHist SGR I 196, Set 35
22 RNAS return for period 16–31 May 1916, Air 1/629/17/120; Lambe letter, 21 May 1916, Vaughan-Lee minute, nd, Air 1/634/17/122/98
23 Jones, War in the Air, ii, 393–4
24 Roskill, ed., Documents ... Naval Air Service, i, 319–21; Sueter minute, 26 Feb. 1916 and passim, Air 1/648/17/122/381
25 Marder, Dreadnought to Scapa Flow, ii, 389–91; Jellicoe to Admiralty, 8 May 1916, Air 1/648/17/122/380
27 Douglas H. Robinson, The Zeppelin in Combat: a History of the German Naval Airship Division, 1912–1918 (London 1966), 130–2; Great Britain, Admiralty Training and
Staff Duties Division, Naval Staff Monographs (Historical), xv: Home Waters, Part vI ([London] 1926), 56–9
28 Naval Staff Monographs, xv, 160 ff; Marder, Dreadnought to Scapa Flow, ii, 421
30 Marder, Dreadnought to Scapa Flow, ii, 424–5; Robinson, Zeppelin in Combat, 141
31 Great Britain, Admiralty Training and Staff Duties Division, Naval Staff Monographs (Historical), xvi: Lowestoft Raid, 24th–25th April, 1916 ([London] 1926), 28–9; Vaughan-Lee minute, nd, Hyde-Thompson minute, 24 May 1916, Air 1/149/15/104
33 Great Britain, Admiralty Training and Staff Duties Division, Grand Fleet Battle Orders, 1: August 1914 to May 31st, 1916 ([London], July 1919), 246
34 Ibid.
35 Marder, Dreadnought to Scapa Flow, ii, 445–6; Campania and Engadine at Jutland, extract from Godfrey Lectures, copy in Marder Papers, DHist m21; Grand Fleet Battle Orders, 258
36 Robinson, Zeppelin in Combat, 147–9; Livock, To the Ends of the Air, 31
37 Jones, War in the Air, ii, 407–8
38 Campania and Engadine at Jutland, Marder Papers, DHist m21
40 Minute of 24 June 1916, Air 1/648/17/122/380
41 Minute of 30 June 1916, ibid.
42 Tudor minute, 6 July 1916, Admiralty to Jellicoe, 14 July 1916, ibid.
43 Robinson, Zeppelin in Combat, 157–8; Marder, Dreadnought to Scapa Flow, iii, 236, 242–3; Jellicoe to Fisher, 23 Aug. 1916, quoted in Marder, Dreadnought to Scapa Flow, iii, 248; Jones, War in the Air, ii, 419
45 Marder, Dreadnought to Scapa Flow, ii, 335
46 C.V. Usborne, Blast and Counterblast: a Naval Impression of the War (London 1935), 96
48 RNAS returns for periods 16–31 May and 16–31 Dec. 1916, Air 1/629/17/120
CHAPTER 7: ALTERNATIVE ROLES. 1917-18

1 Paine to DAS, 30 Jan. 1917, Air 1/657/117/122/594; W.A.B. Douglas, ‘Canadians who Served in the RNAS,’ DHist 74/32; H.A. Jones, The War in the Air: being the
Story of the Part played in the Great War by the Royal Air Force, III (London 1931), 282–5
4 Canadian Bank of Commerce, Letters from the Front; Being a Record of the Part Played by Officers of the Bank in the Great War, 1914–1919, C.L. Foster and W.S. Duthie, eds. (Toronto [1920–1]), I, 221–2
8 S.W. Roskill, ‘The U-Boat Campaign of 1917 and Third Ypres,’ Journal of the Royal United Service Institution, CIV, Nov. 1959, 440–2; Marder, Dreadnought to Scapa Flow, IV, 205–6
9 Marder, Dreadnought to Scapa Flow, IV, 205–6; Roskill, ‘The U-Boat Campaign’
10 ‘Royal Naval Air Service, Home Waters 1917, Part III, Belgian Coast Operations 1917,’ Air 1/677/21/13/1930
12 Lambe to Wing Commanders, 17 March 1917, Air 1/69/15/9/114; Lambe to Trenchard, enclosing ‘Remarks on general policy on employment of aircraft on the Belgian coast during the present situation,’ 15 April 1917 and reply, 16 April 1917, Air 1/71/15/9/125
4.23
36 Dunkirk résumé of operations, July–Dec. 1917, Air 1/629/17/117/1-11; Great Britain, Admiralty, Naval Staff, Gunnery Division, Report of Committee Appointed to Examine the German Defences on the Belgian Coast, 1919 (np, July 1920), 17; Childers and Morris, ‘Report of the Aircraft Bombing Committee,’ 12 March 1919, Air 1/2115/207/56/1
37 Great Britain, Admiralty Training and Staff Duties Division, Naval Staff Monographs (Historical), xix: Home Waters, Part IX, May 1917–July 1917 (London 1939), app. 1, ‘Auxiliary Patrol Strength, July 1917’
38 ‘RNAS Anti-Submarine Report,’ Dec. 1917, Air 1/2314/223/11/7; Jones, War in the Air, iv, 47–9
39 F.W. Walker, ‘War and Post War Experiences,’ nd, Air 1/2389/228/11/106
40 [F.H. Hitchins], ‘Air Vice Marshal Frank S. McGill,’ nd, McGill biographical file, DHist
41 Marder, Dreadnought to Scapa Flow, iv, 52; Robert M. Grant, U-Boats Destroyed: the Effect of Anti-Submarine Warfare (London 1964), 42
42 ‘Submarine Patrols,’ Admiralty to Lambe, 12 Sept. 1917, Air 1/71/15/9/124; South-West Patrol orders, 28 Aug. 1917, Air 1/644/17/122/292
43 Admiralty to Bacon, 9 June 1917, Air 1/73/15/9/159; Jones, War in the Air, iv, 48n, 53–4; Walker, ‘War and Post War Experiences,’ Air 1/2389/228/11/106
45 P.I.X., Spider Web, 39–40
46 Ibid., 47
47 Ibid., 48
48 Ibid., 38, 42, 49–51; CO Felixstowe to DAS, 26 April 1917, Air 1/661/17/122/639
49 Jones, War in the Air, iv, 54; Naval Staff Monographs, xix, 61–2, 114
51 Marder, Dreadnought to Scapa Flow, iv, 102–65
52 Ibid., 270–81; ‘Anti-Submarine Review Home Waters,’ Air 1/677/21/13/1902
53 Marder, Dreadnought to Scapa Flow, iv, 276–92; ‘Comments by Captain Cone, U.S.N. on Memorandum No. 12,’ nd, Air 1/273/15/226/124 pt 1
54 ‘RNAS Anti-Submarine Report,’ Dec. 1917, Air 1/2314/223/11/7
57 Galpin to CO Great Yarmouth, 14 May 1917, Air 1/660/17/122/623, C.F. Snowden Gamble, The Story of a North Sea Air Station: Being some Account of the Early Days of the Royal Flying Corps (Naval Wing) and of the Part Played Thereafter by the Air
Notes to Pages 188–93

Station at Great Yarmouth and Its Opponents during the War, 1914–1918 (London 1928), 237–8

58 Snowden Gamble, North Sea Air Station, 242, 245–6; Robinson, Zeppelin in Combat, 236–8

59 Hobbs and Dickey to co Felixstowe, 14 June 1917, Air 1/637/17/122/156

60 Snowden Gamble, North Sea Air Station, 246–9; Robinson, Zeppelin in Combat, 241

61 Snowden Gamble, North Sea Air Station, 254–6

62 ‘Geschichte der Luftwaffe bis zum Versailler Diktat,’ in Hermann Franke, ed., Handbuch der neuzzeitlichen Wehrwissenscha/ten (Berlin 1939), III, 177–8, DHist SGR 1

63 von Gronau, ‘German Seaplane Stations, 1917,’ app. III. Air 1/677/21/13/1901

64 ‘Monthly Report of Home Stations,’ July 1917, Air 1/627/17/115/1; Jones, War in the Air, IV, 64

65 Nicholl to co Great Yarmouth, 10 Sept. 1917, Air 1/413/15/243/3; Snowden Gamble, North Sea Air Station, 263–71; Robinson, Zeppelin in Combat, 241–3

66 Douglas to co Felixstowe, 2 Oct. 1917, Air 1/641/17/122/221; ‘The Hornets of Zeebrugge’


71 ‘Appreciation of British Naval Effort,’ Nov. 1918, Air 1/308/15/226/191

72 Collishaw, ‘Memories,’ 21
CHAPTER 8: AVIATION AND THE VICTORY OVER THE SUBMARINE

1 Mark Kerr. Land, Sea and Air: Reminiscences of Mark Kerr (London 1927), 294; ‘Memorandum on Certain Lines of Policy Regulating the Conduct of the Air Ministry,’ 23 May 1918, Air 1/2313/221/48
3 Ibid., 136
4 H.A. Jones, The War in the Air: being the Story of the Part played in the Great War by the Royal Air Force, iv (London 1934), 34
5 Ibid., 38

9 Dickson, ‘War Experiences’
10 Interview with W.S. Lockhart, nd. Lockhart biographical file, DHist
11 ‘Aircraft carriers, part 1, 1914–1918,’ Air 1/2103/207/31; Moore, Early Bird, 122
13 C.F. Snowden Gamble, The Story of a North Sea Air Station: Being some Account of the Early Days of the Royal Flying Corps (Naval Wing) and of the Part Played Thereafter by the Air Station at Great Yarmouth and Its Opponents during the War, 1914–1918 (London 1928), 380–2
14 Marder, Dreadnought to Scapa Flow, v, 75
15 Jones, War in the Air, vi (London 1937), 351
16 Peter Gray and Owen Thetford, German Aircraft of the First World War (London 1962), 75–8
19 Robinson, Zeppelin in Combat, 316–18
20 Leckie to CO Great Yarmouth, 31 May 1918, Air 1/416/15/243/5 pt 11
21 Snowden Gamble, North Sea Air Station, 394–6
22 Ibid., 396; Leckie to CO Great Yarmouth, 4 June 1918, Air 1/458/15/312/70
23 Moore, Early Bird, 126–8; ‘Bombing Attack on Tondern,’ 19 July 1918, Air 1/455/15/312/44; Robinson, Zeppelin in Combat, 321
24 Robinson, Zeppelin in Combat, 321
25 Patrol reports, Air 1/458/15/312/44
Notes to Pages 203-13

27 Ibid., 76-8
28 Jones, War in the Air, vi, 374-5
29 Keyes to Admiralty, 31 March 1918, Air 1/69/15/9/114
31 Keyes, Memoirs, ii, 254-5; fortnightly summary, 1-15 April 1918, Air 1/39/AH/15/9/6
32 Fortnightly summary, 16-30 April 1918, Air 1/39/AH/15/9/6; Marder, Dreadnought to Scapa Flow, v, 60-2
33 Keyes, Memoirs, ii, 162
34 Sykes to GOC RAF in France, 14 April 1918, Lambe to Keyes, 28 April 1918, Air 1/69/15/9/114
35 Lambe to Keyes, 28 April 1918, ibid.
36 Salmond-Mulock correspondence, 2-10 May 1918, Air Ministry to distribution. 16 May 1918, Air 1/913/204/5/852; Keyes-Admiralty correspondence, 6-20 May 1918, Air 1/308/15/226/193
37 Admiralty to Air Ministry, 22 May 1918, ibid.; Keyes to Admiralty, 28 May 1918, Air 1/69/15/9/114; Air Ministry to GOC RAF in the Field, 4 May 1918, c-in-c BEF to War Office, 14 May 1918, Robinson to Admiralty, 28 May 1918, Cubitt to c-in-c BEF, 3 June 1918, Dill to Vice-Admiral Dover Patrol, 4 June 1918, GOC No 5 Group to GOC RAF in the field, 5 and 6 June 1918, Air 1/913/204/5/852; Jones, War in the Air, vi, 393
38 Jones, War in the Air, vi, 393; fortnightly summary, 16-31 May 1918, Air 1/39/AH/15/9/6
39 Fortnightly summary, 1-15 June 1918, Air 1/39/AH/15/9/6; GOC No 5 Group to GHQ Army, 29 June 1918, Air 1/58/5/9/62
40 Walter v. Eberhardt, ed., Unsere Luftstreitkräfte, 1914-1918 (Berlin 1930), 124-6, DHist sgr i 196, Set 66
41 Keyes to Admiralty, 28 June 1918, Air 1/69/15/9/114; fortnightly summary, 1-15 August 1918, Air 1/39/AH/15/9/6
42 Fortnightly summary, 16-31 Aug. 1918, Air 1/39/AH/15/9/6; Eberhardt, ed., Unsere Luftstreitkräfte, 126
43 Air combat reports, 5, 16, 24 Sept. 1918, Air 1/59/15/9/65; fortnightly summary, 1-15 Sept. 1918, Air 1/39/AH/15/9/6
44 Fortnightly summaries, summer 1918, Air 1/39/AH/15/9/6; Lambe to OCS, 13 June 1918, Air 1/58/15/9/65
46 Fortnightly summaries, April-Oct. 1918, Air 1/39/AH/15/9/6
47 Ibid.; RAF committee report, pt i, 12 March 1919, Air 1/2115/207/56/1
48 Lambe to OCS 82 Wing, 15 Aug. 1918, Air 1/73/15/9/150
49 No 217 Squadron report on submarine attack, 12 Aug. 1918, Air 1/456/15/312/51
50 Marder, *Dreadnought to Scapa Flow*, v, 30-5

51 Longmore to Air Council, 10 April 1918, Air 1/457/15/312/55; report of Edward, 29 April 1918, Air 1/278/15/226/126 pt ii; 'Report on Present Position of Royal Air Force in Mediterranean,' Aug. 1918, Air 1/287/15/226/137 pt ii; Scarlett, 'Progress of RAF Units in Adriatic,' memorandum, 27 July 1918, Air 1/286/15/226/137 pt i; 'Enemy aircraft in the Adriatic,' serial no 2, Aug. 1918, Air 1/454/15/312/31; Admiralty to Air Ministry, 1 Nov. 1918, Air 1/291/15/226/140 pt ii; A.B. Shearer biographical file, DHist


53 'Enemy Aircraft in the Adriatic Sea,' Aug. 1918, Air 1/454/15/312/31; extracts from 'Offensive Anti-Submarine Operations,' [Oct. 1918], Air 1/291/15/226/140 pt ii


56 Daily report, 24 Aug. 1918, Air 1/456/15/312/46; Bicknell to Dodds, 23 July 1964, F.R. Bicknell biographical file, DHist

57 Vyvyan to Pink, 1 July 1918, Air 1/463/15/312/131; Mediterranean District RAF report, 24 May–14 June 1918, Air 1/458/15/312/74; Gregson, 'War Experiences,' nd, Air 1/2387/228/11/42; organization and strength, Mediterranean district, Nov. 1918, Air 1/473/15/312/176; Longmore, *From Sea to Sky*, 81


59 Egypt Group monthly statistical reports, April–Oct. 1918, Air 1/455/15/312/35

60 Marder, *Dreadnought to Scapa Flow*, v, 86–7


62 Marder, *Dreadnought to Scapa Flow*, v, 86–105

63 Groves, 'In Shore Patrol Work for Aeroplanes,' 18 March 1918, Air 1/6A/AH/4/43

64 Scarlett to distribution, 13 April 1918, Admiralty-Air Council correspondence, April–May 1918, Air 1/465/15/312/153; 'Memorandum on the Organisation of the Royal Air Force in the United Kingdom,' [March 1918], Air 1/450/15/312/5; Air Ministry to distribution, 27 May 1918, Air 1/73/15/9/144

65 Richardson holographic report, 10 May 1918, Air 1/477/15/312/231; CO No 18 Group to V A East Coast of England, 26 Aug. 1918, Air 1/421/15/249/1; report of Naval Staff (Air Division), 8 June 1918, Air 1/465/15/312/149; Admiralty to V A East Coast of England, 30 July 1918, Air 1/285/15/226/136 pt ii


67 Fisher memorandum, Oct. 1918, Air 1/643/17/122/272
69 Reports of No 10 Group, Sept. 1918, Air 1/411/15/241/4 pt 11; reports of No 9 Group, June–Oct. 1918, Air 1/486/15/312/272 and Air 1/486/15/312/274; Brig-Gen No 9 Group to C-in-C Plymouth, 7 July 1918, Air 1/413/15/242/1; attack report, 3 June 1918, Air 1/490/15/312/282; report of attack on 26 and 27 July 1918, Air 1/420/15/246/1
70 Nicholson to Air Ministry, 5 July 1918, Air 1/284/15/226/136 pt 1; ‘Report of Committee Appointed to Review the Whole Position as regards Aircraft North of 57° North Latitude’ [16 August 1918], Air 1/643/17/122/262; Grant, U-boats Destroyed, 107
71 Snowden Gamble, North Sea Air Station, 367; so 1 Air to DAD, 30 Sept. 1918, Air 1/291/15/226/140 pt 1
72 Great Britain, Admiralty, Historical Section, The Defeat of the Enemy Aircraft on Shipping, 1939–1945: a Study of Policy and Operations (London 1957), 1A, 8
73 ‘Notes on Anti-Submarine Conference held on the 28th August 1918,’ Air 1/447/15/303/38; airship tactical diagrams, [June 1918], Air 1/465/15/312/149; Defeat of the Enemy Aircraft on Shipping, 1A, 9
74 Defeat of the Enemy Aircraft on Shipping, 1A, 9; Marder, Dreadnought to Scapa Flow, v, 94–5
75 Scarlett to DOD(M), 16 April 1918, Scarlett memorandum, 22 April 1918, Scarlett minute, 19 May 1918, Air 1/277/15/226/126 pt 1; Lambe to Keyes, 13 Jan. 1918, Air 1/72/15/9/141; minutes of CNO and CNO, Dec. 1916 and Jan. 1917, Air 1/656/17/122/555; Great Britain, Admiralty, Historical Section, ‘Draft of A/C V U-Boats in WW I in Home Waters, 1917–1918,’ nd, and ‘Anti-Submarine Measures in World War I,’ nd, copies in Marder Papers, DHist M18 and M20
76 Defeat of the Enemy Aircraft on Shipping, 1A, 9–10
77 Roskill, ed., Documents ... Naval Air Service, 670–1
78 Admiralty to Air Ministry, 18 July 1918, Robinson to War Cabinet, 13 Aug. 1918, Geddes to War Cabinet, 31 Aug. 1918, CAS notes on Admiralty memorandum, [Sept. 1918], extracts from minutes of Air Policy Committee’s 7th meeting, 5 Sept. 1918, Air 1/17/15/1/85; Admiralty to Air Ministry, 8 Aug. 1918, Air 1/643/17/122/257; Wemyss to Beatty, 10 Aug. 1918, Wester Wemyss Papers, copy in Marder Papers, DHist M12
79 H.H. Smith, A Yellow Admiral Remembers (London 1932), 319–20; Bell Davies, Sailor in the Air, 180–2
81 The Picton Gazette, 1 Aug. 1969 (anniversary insert dated July 1969, 14); Delamere to Dodds, 17 May 1965, Delamere biographical file, DHist; Snowden Gamble, North Sea Air Station, 427–8
82 Roskill, ed., Documents ... Naval Air Service, 715–33

CHAPTER 9: THE AIR DEFENCE OF BRITAIN

2 Ibid., 50, 52–6
3 Quoted in ibid., 67
4 Ibid., 92-3, 378
6 S.W. Roskill, ed., Documents relating to the Naval Air Service, i: 1908–1918 (London 1969), 283–4
7 Ibid., 294–5. See also AA defences, transfer to War Office, Dec. 1915 to Feb. 1916, Air 1/2316/223/19/24.
8 Board of Invention and Research, ‘Report of Sub-Committee for Aeroplanes on Night Flying of Aeroplanes,’ 14 Sept. 1915, Air 1/147/15/72; Jones, War in the Air, III, 154–5; Davies to DAS, 26 Feb. 1916, Air 1/437/15/294/1
9 Vaughan-Lee memorandum, 3 March 1916, Air 1/147/15/72
10 Kiggell, minute 20 to report on Zeppelin raid of 13–14 Oct. 1915, 10 Nov. 1915, Air 1/573/16/15/153
11 Board of Invention and Research, ‘Report of Sub-Committee for Aeroplanes on Night Flying of Aeroplanes,’ 14 Sept. 1915, Air 1/147/15/72; report and minutes on Zeppelin raid, 13–14 Oct. 1915, Air 1/573/16/15/153; ‘Instructions Regarding the Aerial Defence of the United Kingdom,’ 1 March 1916, Air 1/621/16/15/366
12 Robinson, Zeppelin in Combat, 120–8; Jones, War in the Air, III, 135–6, 141–2; reports on air raid, 31 Jan.–1 Feb. 1916, Air 1/573/16/15/156
14 Vaughan-Lee memorandum, April 1916, Air 1/300/15/226/151 pt 1
16 Maude to DAS, 2 April 1916, Air 1/295/15/226/143 pt 1; Philip Joubert de la Ferté, The Fated Sky (London 1952), 60–1
17 ‘Royal Naval Air Service Report,’ 3 April 1916, Air 1/212/15/226/29
18 Minutes of 2nd and 12th Air Board meetings, 24 May and 15 June 1916, Air 6/1
19 DAO to GHQ Home Forces, 11 July 1916, Air 1/612/16/15/300A; minutes of 20th Air Board meeting, 8 Aug. 1916, Air 6/2; Jones, War in the Air, III, 165–7
20 Jones, War in the Air, III, 168, 170
21 Quoted in Robinson, Zeppelin in Combat, 165–6
22 Ibid., 153–5
Robinson report, 3 Sept. 1916, Air 1/582/16/15/181 pt III; Robinson, Zeppelin in Combat, 172-5; Jones, War in the Air, III, 227-30
24 Quoted in Robinson, Zeppelin in Combat, 192
25 Tempest’s report, 2 Oct. 1916, Air 1/585/16/15/185; Tempest’s account, 15 Sept. 1920. Imperial War Museum, copy in Tempest biographical file, DHist
26 Tempest’s account, 15 Sept. 1920. See also Murray F. Sueter Airmen or Noahs: Fair Play for our Airmen (London 1928), 18-19; Tempest to Dodds, 5 April 1964, W.J. Tempest biographical file, DHist.
27 Jones, War in the Air, III, 238-43; Brophy report, 27-28 Nov. 1916, Air 1/586/16/15/188 pt 1
28 Robinson, Zeppelin in Combat, 204-33
29 Watkins report, 17 June 1917, Air 1/589/16/15/200
30 Pritchard report, 21 Oct. 1917, Air 1/596/16/15/217 pt 1; Robinson, Zeppelin in Combat, 265-80
32 Peter Gray and Owen Thetford, German Aircraft of the First World War (London 1962), 128-32
33 Ernst von Hoeppner, Deutschlands Krieg in der Luft (Leipzig 1921), 112, DHist
35 RNAS communiqué, ‘Air Raid, 25th May, 1917,’ Air 1/588/16/15/197
36 DCAS, The Nore, to DAS, 5 June 1917, Air 1/647/17/122/367; air raid, 5 June 1917, Air 1/588/16/15/198
37 ‘The First Big Aeroplane Raid,’ Aeroplane, 30 May 1917, 1364
38 Jones, War in the Air, V, 22-5; minutes of 154th War Cabinet meeting, 5 June 1917, Cab 23/3; minutes of War Office conference, 31 May 1917, Air 1/614/16/15/318
39 Hoeppner, Deutschlands Krieg in der Luft, 111-12
40 Minutes of 100th Air Board meeting, 14 June 1917, Air 6/8; ‘Circular No. 131’ and air raid, 13 June 1917, police summary ‘up to 10 July 1917,’ Air 1/589/16/15/199
41 Minutes of 163rd War Cabinet meeting, Cab 23/3; Jones, War in the Air, V, app. IV, 479-81
42 RNAS, ‘Aeroplane Raid, 4th July 1917,’ Air 1/590/16/15/201; Fredette, Sky on Fire, 69-71
43 McCudden report, 7 July 1917, Air 1/590/16/15/202
44 Hedges, ‘Air Raid July 7th 1917,’ 8 July 1917, ibid.; reports of air raid, 7 July 1917, Air 1/646/17/122/360; Fredette, Sky on Fire, 75-84
45 Jones, War in the Air, V, 38-42; First Report of the Committee on Air Reorganization and Home Defence against Air Raids, nd, Air 1/609/16/17/275; Jones, War in the Air, V, app. VI, 487-91
46 Shaw memorandum, 5 Aug. 1917, Air 1/609/16/15/275; E.B. Ashmore, Air Defence (London 1929), 36-7, 39, 41-4
682 Notes to Pages 251-8

47 Kerby report, 13 Aug. 1917, Air 1/640/17/122/197; RNAS supplementary communiqué, air raid, 12 Aug. 1917, Air 1/591/16/15/204; Fredette, Sky on Fire, 95-100

48 Fredette, Sky on Fire, 107; RNAS supplementary communiqué, air raid, 22 Aug. 1917, Air 1/591/16/15/206; Kingsford, Kerby, and Hervey reports, 22 Aug. 1917, Air 1/296/15/226/143 pt ii

49 Hoepnner, Deutschlands Krieg in der Luft, 112

50 French to War Office, 3 Sept. 1917, Air 1/129/15/40/201; air raid, 3-4 Sept. 1917, Air 1/592/16/15/208

51 Minutes of 228th War Cabinet meeting, 5 Sept. 1917, Cab 23/4; Smuts memorandum, 6 Sept. 1917, Jones, War in the Air, v, app. VII, 491-3

52 Ashmore, Air Defence, 54-6; taped interview with A.E. Godfrey, 2 Nov. 1972, transcript, 32-3, Godfrey biographical file, DHist


54 Jones, War in the Air, v, 87-8; minutes of 243rd War Cabinet meeting, 2 Oct. 1917, Cab 23/4. The Haig-Robertson correspondence is in Air 1/522/16/12/5.

55 Air raid, 6 Dec. 1917, Air 1/598/16/15/221

56 Rogers, ‘Combats in the Air,’ 12 Dec. 1917, Air 1/1828/204/202/19

57 Fredette, Sky on Fire, 173-6; Murlis-Green report, 18 Dec. 1917, Air 1/598/16/15/222; Ashmore, Air Defence, 74

58 ‘Report on Bombs Dropped in London during Raids of 28/29th and 29/30th January 1918,’ Air 1/562/16/15/65; air raid, 16-17 Feb. 1918, Air 1/600/16/15/226; Higgins’ reports on action taken by 6 Brigade RFC during air raids, 16-17 and 17-18 Feb. 1918, Air 1/36/15/1/235; Godfrey report, 7 March 1918, 78 Squadron report, 8 March 1918, Air 1/601/16/15/229

59 Robinson, Zeppelin in Combat, 297-8

60 Intelligence officer, Tees Garrison, report, 13 March 1918, Air 1/601/10/15/231; Naval Staff (Ops Div), ‘Action taken by Aeroplane Contingents,’ 13 April 1918, Air 1/36/15/1/233

61 Higgins, ‘Report on Night Hostile Aeroplane Raid, May 19/20th 1918,’ 20 May 1918, 50, 12, and 39 Squadrons’ reports, 19-20 May 1918, Air 1/603/16/15/233

62 Ashmore, Air Defence, 93-4. See also Jones, War in the Air, v, app. VIII, 493-504.

63 Ashmore, Air Defence, 89, 108-9; Jones, War in the Air, v, app. IX, 505-7

64 [E.] Ludendorff, The General Staff and its Problems: the History of the Relations between the High Command and the German Imperial Government as revealed by Official Documents (London nd), ii, 452, 457


66 R.V. Dodds, ‘The Zeppelin Hunters from Canada,’ Legionary (Sept. 1963), 7-10, 15
Notes to Pages 258–63

67 Robinson, Zeppelin in Combat, 321–2
68 W.A.B. Douglas, taped interview with C.B. Sproatt, 22 Dec. 1968, transcript, DHist 74/43; Snowden Gamble, North Sea Air Station, 408–9
69 Cadbury report, 6 Aug. 1918, Leckie to Lockwood Marsh, 10 Aug. 1918, Air 1/603/16/15/234
70 Snowden Gamble, North Sea Air Station, 409–11

CHAPTER 10: THE RNAS AND THE BIRTH OF A BOMBING STRATEGY

2 154th War Cabinet meeting, 5 June 1917, Cab 23/3; Sir Walter Raleigh, The War in the Air: being the Story of the Part played in the Great War by the Royal Air Force, 1 (London 1922), 488
3 Trenchard to Kiggell, 22 Oct. 1915, Maurice minute, 1 Nov. 1915, Air 1/2265/209/70/1
5 Great Britain, Parliament, House of Commons, Debates, 16 Feb. 1916, 92–3, 5 April 1916, 1300
6 Ibid., 17 May 1916, 1582, 1585–9. See also 7 March 1916, 1429.
7 Report of Churchill’s evidence to the Air Board, mid-1916, Air 1/298/15/226/149 pt 11
8 War Office to JWAC, 13 March 1916, Air 1/270/15/226/115; Interim Report of the JWAC, 20 March 1916, Air 1/2319/223/26; Trenchard to Haig, 20 March 1916, Air 1/2265/209/70/1
9 Private memorandum circulated to the JWAC, 31 March 1916, Air 1/2319/223/26
10 Note of April 1916, Air 1/300/15/226/151 pt 1; remarks by naval members of JWAC, 3 April 1916, Air 1/2319/223/27
12 Lambe, Bacon, and Vaughan-Lee correspondence, 21–28 May 1916, Air 1/634/17/122/98; Elder, History of 3 Wing, Air 1/648/17/122/397
13 Admiralty to OC 3 Wing, 27 July 1916, enclosure and papers concerning attack on Friedrichshafen, 29 Sept.–9 Oct. 1916, Air 1/300/15/226/151 pt 1
14 Admiralty to OC 3 Wing, 27 July 1916 and enclosure, ibid.
15 Translation of French report regarding expedition of 12 Oct. 1916, nd, Air 1/648/17/122/397
16 Bombing reports, Air 1/111/15/39/1
17 J.M. Bruce, British Aeroplanes, 1914–18 (London 1957), 541–5; ‘Bomb Carrying and Releasing Gear on Aircraft 1914–1918,’ Air 1/2301/215/2; Bell Davies to Elder, 4 Sept. 1916, Air 1/115/15/39/51
18 Logbook, 12 Oct. 1916. Raymond Collishaw Papers, DHist 78/132, 1-A, folder 102
20 Hastings, ‘Oberndorf Raid,’ 364–84; Bell Davies, Sailor in the Air, 150–3
21 Tudor minute, 26 Oct. 1916, Air 1/648/17/122/397
22 Minutes of First Sea Lord and First Lord, 26 and 29 Oct. 1916, ibid.
23 Translation of French report regarding expedition of 12 Oct. 1916, 8, ibid.
24 Davies to Secretary of the Admiralty, 23 Oct. 1916, Air 1/638/17/122/161
26 Ibid.; Elder to Secretary of the Admiralty, 30 Oct. 1916, and to DAS, 13 Nov. 1916, bombing reports, Air 1/648/17/122/397; bombing reports, Air 1/111/15/39/1; summary of 3 Wing bombing operations, Air 1/115/15/39/70
27 Elder to DAS, 21 Nov. 1916, and to Secretary of the Admiralty, 25 Nov. and 28 Dec. 1916, Rathbone to Elder, 4 Dec. 1916, Air 1/648/17/122/397; Ernst von Hoeppner, Deutslands Krieg in der Luft (Leipzig 1921), 136, DHist sGR1 196, Set 3
28 Wolfgang Bündingen, Entwicklung und Einsatz der deutschen Flakwaffe und des Luftschutzes im Weltkriege (Berlin 1938), 104; final report on 3 Wing, app. 1, Weston to Elder, 18 May 1917, Air 1/648/17/122/397
29 Rathbone to Secretary of the Admiralty, 4 March 1916, Air 1/648/17/122/397; bombing reports, Air 1/111/15/39/1
31 ‘Notes for the Training of Pilots or Observers on Handley Page Machines,’ nd, Air 1/1007/204/5/1271; DOD minute, 5 Aug. 1917, Air 1/642/17/122/250; Stedman, Boxkite to Jet, 25; Bewsher, ‘Green balls,’ passim; Bruce, British Aeroplanes, 268–78; Owen Thetford, British Naval Aircraft since 1912 (London 1962), 212–13; Penrose, British Aviation, passim.
32 ‘Notes for... Training... on Handley Page Machines,’ Air 1/1007/204/5/1271; ‘Raids... by Handley Page machines nos. 1459 and 1460,’ Air 1/2266/209/70/18; bombing report, Air 1/115/15/39/70; Stedman, Boxkite to Jet, 25
33 Bewsher, ‘Green balls,’ 59–60
34 Elder to Secretary of the Admiralty, 18 March 1917, Air 1/648/17/122/397
35 Bombing report, Air 1/638/17/122/161; 3 Wing historical summary, Air 1/2266/209/70/18; Admiralty to War Office, 4 March 1917, Roskill, ed., Documents ... Naval Air Service, 411–12; Elder, ‘No. 3 Wing, Royal Naval Air Service,' particularly app. ii, ‘Summary of raids,’ Air 1/648/17/122/397
36 Bewsher, ‘Green balls,’ 75–7
38 Haig to War Office, 1 Nov. 1916, Air 2/123/810620
39 Curzon to War Committee, 9 Nov. 1916, ibid.: Roskill, ed. Documents ...
40 ‘No. 3 Wing,’ Air 1/648/17/122/397; meeting of 22 Oct. 1916, Air 1/2265/209/70/1; summary of strategic bombing, [mid-1918], Air 1/461/15/312/107; Foreign Office to International Red Cross Committee, 11 Aug. 1916, ‘Correspondence with His Majesty’s Minister at Berne respecting the question of reprisals against prisoners of war,’ Canada, Secretary of State, Copies of Proclamations, Orders in Council and documents relating to the European war (Ottawa [1917]), app. cc, 908–9; The Times History of the War (London [1914]–1921), x, 53–5, x1, 166
41 Bombing report, Air 1/111/15/39/1; University of Toronto, University of Toronto Roll of Service, 1914–1918, G. Oswald Smith, ed. (Toronto 1921)
42 Bombing report, Air 1/111/15/39/1; Elder to Secretary of the Admiralty, 15 April 1917, Air 1/648/17/122/397
43 Elder to Secretary of the Admiralty, 15 April 1917, Air 1/648/17/122/397
45 Jones, War in the Air, VI, 118, 122
46 Translation of extract from (French Seventh) Army Aviation Headquarters, report no 139/1, 19 May 1917, DHist microfilm extracts of AHB files
47 Bombing statistics, Air 1/271/15/226/118 and Air 1/111/15/39/1.
48 28th Air Board meeting, 1 Nov. 1916, Air 6/3; RFC HQ, notes on policy, 8 April 1917, paper on long-distance bombing, 26 Nov. 1917, Air 1/477/AH15/312/225
49 Anthony Verrier, The Bomber Offensive (London 1968), 9
50 Air Board reports to Cabinet, 21 April, 9 and 16 June 1917, Air 1/2313/221/48; Great Britain, Parliament, House of Commons, Debates, 26 April 1917, 2655–8
51 154th and 169th War Cabinet meetings, 5 and 26 June 1917, Cab 23/3; correspondence of 18 June–5 July 1917, Air 2/87/304
52 178th War Cabinet meeting, 7 July 1917, Cab 23/3; Trenchard to G.S. Advanced GHQ, 12 July 1917, Air 1/970/204/S1108
54 War in the Air, Appendices, 10
CHAPTER 11: THE STRATEGIC AIR OFFENSIVE AGAINST GERMANY

1 Andrew Boyle, Trenchard (London 1962), 261
2 Trenchard to Lloyd George, 13 Jan. 1918, Air 1/522/16/12/5
3 Norman to Rothermere, 25 March 1918, Air 1/2422/305/18/17
4 Ibid.
5 ‘Proposed minute on the formation of a Strategic Committee dealing with air matters,’ 19 April 1918, Air 1/450/15/312/4
11 Ibid.
12 Flavelle logbook, 24 Oct. 1917, G.A. Flavelle biographical file, DHist
13 C. Gordon Burge, The Annals of 100 Squadron (London 1918), 101
14 No 41 Wing bombing reports, Air 1/1058/204/5/1564; ‘Bombing of Germany by British aircraft, 1.10.17–11.11.18,’ nd, Air 1/451/15/312/19; Lambe to Bacon, 31 Oct. 1917, Paine minute, 8 Nov. 1917, Air 1/640/17/122/210
15 War in the Air, Appendices. 43; HQ RFC to GHQ, 8 Dec. 1917, Air 1/450/15/312/1
16 VIII Brigade progress report, Feb. 1918, Air 1/450/15/312/1; Salmond to Foulois, 13 Feb. 1918, Air 1/970/204/5/1108
17 No 100 Squadron operations summary, 4–5 Jan. 1918, Air 1/176/15/199/1; 100 Squadron operations reports, 18–19 Feb. 1918, Air 1/721/48/2
18 No 55 Squadron bombing reports, 12 and 19 Feb. 1918, and Gray to HQ 41 Wing, 10 March 1918, in Air 1/1750/204/139/8
19 Trenchard to GHQ, 8 Dec. 1917, Air 1/970/204/5/1108; Trenchard to Newall, 29 March 1918, Air 1/978/204/5/1140; Burge, Annals of 100 Squadron, 108–9
20 ‘Results of Air-raids, Metz,’ trans. 4 April 1919, Air 1/685/21/13/2240
21 No 55 Squadron combat report, 16 May 1918, Air 1/478/15/312/233; 55 Squadron bombing report, 16 May 1918, Air 1/1750/204/139/8; War in the Air, Appendices, 50
22 War in the Air, Appendices, 50; 100 Squadron operations summary, 21–22 May 1918, Air 1/176/15/199/1; 100 Squadron operation report, 21–22 May 1918, Air 1/721/48/2
24 Bruce, British Aeroplanes, 191–9
25 War in the Air, Appendices, 51; 99 Squadron bombing and combat reports, 24 May 1918, Air 1/478/AH15/312/233
26 No 99 Squadron bombing and combat reports, 24 May 1918
27 Diary, Donald A. MacDonald biographical file, DHist
28 No 99 Squadron bombing and combat report, 29 May 1918, Air 1/478/AH15/312/233
29 VIII Brigade daily report, 27 May 1918, ibid.
30 Jones, War in the Air, III (London 1931), 292–9
32 Wolfgang Bündingen, Entwicklung und Einsatz der deutschen Flakwaffe und des Luftschutzes im Weltkriege (Berlin 1938), 103
33 Ibid., 103–4
34 ‘Operation order for the guidance of the Independent Force’ (draft), nd, Air 1/462/312/16
35 ‘Review of Air Situation and Strategy for the Information of the Imperial War Cabinet,’ 27 June 1918, in Frederick Sykes, From Many Angles: an Autobiography (London 1942), app. v, 544–54
36 Boyle, Trenchard, 291–2; Trenchard to Weir, 18 June 1918, Air 1/30/15/1/155 1–3
37 ‘Squadrons Allotted to the Independent Force, Royal Air Force,’ 13 May 1918, ibid.
38 Trenchard to de Castelnau, 23 June 1918, Air 1/995/204/273/201
40 Groves to Sykes, 11 Sept. 1918, Air 1/460/15/312/97; Independent Force statistics, June 1918, Air 1/451/15/312/20
41 Trenchard to Weir, 2 July 1918, Air 1/2000/204/273/275
42 Summary of 99 Squadron operations, 1918, nd, folder 11, file 6, PAC. RG 9 III, vol. 4611; 100 Squadron operation report, 6–7 June 1918, Air 1/721/48/2; 'History of No. 99 Squadron,' 14, Air 1/176/15/198/3
43 'History of No. 99 Squadron,' 18–19; 55 Squadron bombing report, 25 June 1918, Air 1/170/204/139/8; 104 Squadron historical summary, 13 Jan. 1919, Air 1/176/15/202/1
44 Burge, Annals of 100 Squadron, 117
45 Report on Independent Force operations during June 1918, 2 July 1918, Air 1/2000/204/273/275
46 No 100 Squadron operation report, 25–26 June 1918, Air 1/721/48/2; 100 Squadron history, nd. 4, Air 1/176/15/199/1
47 Report on Independent Force operations during June 1918, 2 July 1918, Air 1/2000/204/273/275
49 No 104 Squadron operation report, 1 July 1918, Air 1/1750/204/139/9; War in the Air, Appendices, 58–60
50 No 100 Squadron history, nd. 4, Air 1/176/15/199/1; 100 Squadron operation report, 16–17 July 1918, Air 1/721/48/2
52 Dodds, 'Notes on Squadron Histories,' 97 and 215 Squadrons, DHist 73/1552
53 Bruce, British Aeroplanes, 273–8
54 Groves to Sykes, 9 Sept. 1918, Air 1/460/15/312/97; report on Independent Force operations during August 1918, 1 Sept. 1918, Air 1/2000/204/273/275; 'Appendix to Operations Despatch,' Aug. 1918, Air 1/451/15/312/20
55 Report on Independent Force operations during August 1918, 1 Sept. 1918, Air 1/2000/204/273/275
56 No 104 Squadron bombing and air combat reports, 22 Aug. 1918, Air 1/478/15/312/234
57 Air combat report, 22 Aug. 1918, ibid.
58 Ibid.
59 H.B. Monaghan, The Big Bombers of World War I: a Canadian's Journal (Burlington, Ont. 1976), 74–5, 77
61 Trenchard to GHQ, 15 July 1917, Air Board to Haig, 7 Nov. 1917, Air 1/522/16/12/5; Trenchard to Sykes, 4 Aug. 1918, Air 1/460/15/312/100
62 Tiverton to DFO, 'Notes on Defence of Bombing Squadrons Operating with Independent Force,' 8 Aug. 1918, ibid.
63 Groves to Sykes, 11 Sept. 1918, Air 1/460/15/312/97
64 Tiverton to Groves, 4 July 1918, Air 1/461/15/312/107
65 Foch memorandum, 14 Sept. 1918, 'Heads of Agreement as to the Constitution of the Inter-Allied Independent Force,' 3 Oct. 1918, Air 1/30/15/1/155; War in the Air, Appendices, app. xi, 41
66 'History of No. 110 Squadron,' 13 Feb. 1919, Air 1/176/15/205/1
67 Bruce, British Aeroplanes, 197–8, 203–4
68 Independent Force communique no 7, 21 Sept. 1918, Air 1/2085/207/5/1; E.G. Gallagher and R.S. Lipsett biographical files, DHist
69 Bruce, British Aeroplanes, 578; Jones, War in the Air, vi, 149
71 ‘Final report of Chief of Air Service, American Expeditionary Forces,’ United States, Department of the Army, Historical Division, United States Army in the World War (Washington 1948), xv, 230, 249–50
74 Monaghan, Big Bombers, 80–2, 84; Morris, First of the Many, 126–7; Independent Force, ‘Approximate Results,’ 16–17 Sept. 1918, Air 1/2085/207/5/2
75 Independent Force, ‘Approximate Results’; 97 Squadron History, Air 1/176/15/196/1 (part of this source incorrectly identifies the target as Cologne); Independent Force communique no 7, 21 Sept. 1918, Air 1/2085/207/5/1
76 Press clipping, Daily Mail (London), 21 Sept. 1918, Air 1/462/15/312/116
77 FO3 to DFO, 21 Sept. 1918, ibid.
78 Boyle, Trenchard, 312
79 Sykes, From Many Angles, 550–1
81 Trenchard to Secretary Air Ministry, ‘Operations in October,’ 1 Nov. 1918, Air 1/2000/204/273/275; War in the Air, Appendices, 78, 80–1; VIII Brigade bombing reports, 21–22, 23–24 Oct. 1918, Air 1/479/15/312/243
82 No 110 Squadron bombing report, 5 Oct. 1918, ibid.
83 No 110 Squadron bombing report, 21 Oct. 1918, Air 1/478/15/312/235
84 ‘History of 110 Squadron,’ 13 Feb. 1919, Air 1/175/15/205/1; War in the Air, Appendices, 78–80 (in which the raid is incorrectly associated with 100 Squadron)
85 W.R. Read Diary, Imperial War Museum, London
86 Mulock’s notes on No 27 Group, Independent Force, nd, Mulock Papers, document 121, DHist
87 Ibid.; FO3 to DFO, 4 July 1918, Groves, ‘Notes on Potentialities of Norfolk as a Base for the ‘v’ Type Handley Page Aeroplanes,’ [late April or early May 1918], Air 1/461/15/312/107
88 ‘A base in Norfolk’ (draft), 3 May 1918, Air 1/461/15/312/107
89 Undated paper probably written in late May or early June 1918, ibid.
90 Gammell to Groves, 15 Oct. 1918, ibid.
690 Notes to Pages 316–23

91 Lambe to No 5 Group, 31 May 1918, Lambe to Keyes, 9 June 1918, Keyes to Lambe, 11 June 1918, Mulock Papers, documents 81, 82, 86, DHist
92 Tiverton to DFO, 21 June 1918, Air 1/461/15/312/107; Penrose, British Aviation, 402-4; Bruce, British Aeroplanes, 283
94 Lambe to Mulock, 18 July 1918, Groves to Sykes, 2 Aug. 1918, Mulock Papers, documents 91, 92, DHist; R.M. Groves Diary 1, 30 July and 2 Aug. 1918, Imperial War Museum, London
95 Trenchard to Sykes, 12 Aug. 1918, Air 1/1974/204/273/15
96 DAO order, 29 Aug. 1918, Air 1/1974/204/273/14
97 Mulock to parents, 29 Sept. 1918, Mulock Papers, document 99, DHist; Mulock to Gordon, 20 Sept. 1918, Air 1/1974/204/273/15
99 Mulock’s notes on No 27 Group, Mulock Papers, document 121, DHist
101 Trenchard to Mulock, 15 Oct. 1918, Mulock to Trenchard, 16 Oct. 1918, Air 1/1974/204/273/15
102 Trenchard to Mulock, 17 Oct. 1918, ibid.
103 Map of bombing routes, nd, Mulock Papers, document 118, DHist; Mulock to Trenchard, 17 and 18 Oct. 1918, Air 1/1974/204/273/18
104 Mulock to Trenchard, 17 Oct. 1918, Trenchard to Mulock, 21 Oct. and 11 Nov. 1918, ibid.; Bruce, British Aeroplanes, 284-5
105 Trenchard, ‘Final Despatch,’ London Gazette (Supplement), 1 Jan. 1919
106 Ibid.
107 Survey of damage to steel works, nd, 2, Air 1/1999/204/273/269
108 Survey of damage to chemical and munitions factories, nd, 5, Air 1/1999/204/273/268
110 Survey of damage to steel works, nd, 15, Air 1/1999/204/273/269
111 Ibid., 20
112 Survey of damage to chemical and munitions factories, nd, 17-18, Air 1/1999/204/273/268
113 Survey of damage to steel works, nd, 16, Air 1/1999/204/273/269; Sykes, From Many Angles, 231-2
114 Jones, War in the Air, vi, 153
115 Survey of damage to steel works, nd, 16, Air 1/1999/204/273/269
116 Ernst von Hoeppner, Deutschlands Krieg in der Luft (Leipzig 1921), 108-9, DHist SGR 1 196, Set 3
Notes to Pages 324–38

117 Trenchard, ‘Final Despatch,’ London Gazette (Supplement), 1 Jan. 1919
118 ‘Results of Air-raids, Metz,’ trans. 4 April 1919, Air 1/685/21/13/2240; Jones, War in the Air, vi, 157
120 Report on Independent Force operations during August 1918, 1 Sept. 1918, Air 1/2000/204/273/275
121 Robert Endres, ‘Dokumente der deutschen luftstreitkräfte 1882–1919’ (unpublished research paper prepared for the Military History Research Bureau, Freiburg, 1965), gives a list of German air stations; Sykes, From Many Angles, 229; E.J. Kingston-McCloughry, Winged Warfare (London 1937), 41
122 FO 3 to DFO, 15 Oct. 1918, Air 1/461/15/312/107
123 W.R. Read Diary, 19 and 23 Aug. 1918, 16–17, 24, Imperial War Museum, London
124 Jones, War in the Air, ii (London 1931), 325; iii, 339–41
125 Mulock, ‘The War in the Air: Canada’s Part,’ speech to Canadian Club of Winnipeg, 18 Sept. 1919, Mulock Papers, document 110, DHist
126 Squadron lists, biographical cards and files, DHist

CHAPTER 12: EXPERIMENTS ON THE WESTERN FRONT, 1914–15

3 Norman MacMillan, Sir Sefton Brancker (London 1935), 54, 56, 60
4 Sir Walter Raleigh, The War in the Air: being the Story of the Part played in the Great War by the Royal Air Force, i (London 1922), 293, 417; MacMillan, Brancker, 61; L.A. Strange, Recollections of an Airman (London 1935), 36
5 MacMillan, Brancker, 63; Maurice Baring, Flying Corps Headquarters, 1914–1918 (Edinburgh 1968), 12–14; Raleigh, War in the Air, i, 286–7
6 For thorough and detailed studies of the ground campaigns on the Western Front, 1914–18, see the relevant volumes of James E. Edmonds, Military Operations: France and Belgium (London 1925–47), and Deutschland, Reichsarchiv und Oberkommando des Heeres, Der Weltkrieg 1914 bis 1918 (Berlin 1925–44). These are the respective British and German official histories. For a more critical approach in English see B.H. Liddell Hart, A History of the World War, 1914–18 (London 1934). On the Canadian contribution see G.W.L. Nicholson, Canadian Expeditionary Force, 1914–1919 (Official History of the Canadian Army in the First World War; Ottawa 1962).
1/2162/209/7/2; 5 Squadron war diary, 21 Aug. 1914, Air 1/2163/209/8/2; 3 Squadron war diary, 22 Aug. 1914, Air 1/2162/209/6/2
8 Raleigh, War in the Air, I, 287, 304–7
9 No 3 Squadron war diary, ‘Note of 26th August by Capt Charlton,’ 26 Aug. 1914, Air 1/737/204/2/2
10 Raleigh, War in the Air, I, 327
12 Ernst von Hoeppner, Deutschlands Krieg in der Luft (Leipzig 1921), 12–13, DHist SGR I 196, Set 3
13 No 3 Squadron war diary, 7 Sept. 1914, Air 1/737/204/1/2
14 Wanklyn to Dodds, 4 March 1963, F.S. Wanklyn biographical file, DHist
16 French to War Office, 14 Nov. 1914, Air 1/141/15/40/307
17 Sykes to GHQ, 16 Dec. 1914, Air 1/524/16/12/23
18 Trenchard to Ashmore, 4 Dec. 1914, Air 1/1283/204/11/13
19 ‘Co-operation of Aeroplanes with Artillery,’ Air 1/141/15/40/307
20 Jones, War in the Air, II, 87–90
21 Edmonds, Military Operations: France and Belgium, 1915 (London 1927), 248–9; Air Historical Board, ‘Contact Patrol,’ nd, Air 1/674/21/6/120
22 ‘Contact Patrol’; Jones, War in the Air, II, 111
23 A.D. Bell-Irving to Dodds, 17 April 1962, M. McB. Bell-Irving biographical file, DHist
24 Salmon to oc 2 Wing, 29 April 1915, Air 1/2151/209/3/241
25 Air Historical Branch to Canadian Joint Staff, 25 Sept. 1962, M. McB. Bell-Irving biographical file, DHist; 7 Squadron, air combat report, 28 April 1915, Air 1/1218/204/5/2634/7
26 Brooke-Popham, ‘Fighting Hostile Aeroplanes in the Air,’ 1 Feb. 1915, Air 1/746/204/3/22; 2 Wing war diary, 13 April 1915, Air 1/1274/204/10/2; H.E. Chaney, ‘Remarks on Diagrams for Assistance during Aerial Combats,’ 9 Sept. 1915, Air 1/755/204/4/81
27 No 1 Wing, ‘Operation Orders for Tomorrow,’ 29 March–12 April, 7 May, and 30 June 1915, Air 1/252/204/8/7; 1 Wing, ‘Patrols,’ 24 June 1915, Air 1/1254/204/8/31


33 RFC communiqué no 10, 12 Sept. 1915, DHist 75/413


35 Air Historical Board, ‘The Battle of Loos: Cooperation between Aircraft and Artillery,’ Sept. 1925, Air 1/675121/13/1322


37 ‘Naval and Military Aeronautics,’ Aeroplane, 27 Oct. 1915, 514

38 No 7 Squadron air combat reports, 20, 22, and 26 Sept. 1915, Air 1/1218/204/5/2634/7; RFC communiqué no 12, 27 Sept. 1915, DHist 75/413

39 Andrew Boyle, Trenchard (London 1962), 136

40 ‘Proposals for Bombing... 7th August 1915,’ Air 1/752/204/4/61

41 ‘General Notes on Bomb Sights’ and ‘Short Notes on the Evolution and Theory of Bomb Sights,’ 6-8, app. 1, 8 Feb. 1912, Air 1/674/21/6/77

42 RAF Staff College, ‘Air Operations on the Western Front 1914-18: the Development of the Activities of the RFC up to the Battle of the Somme,’ nd, Air 1/2385/228/4

43 RAF casualty summary, Western Front 1914-1918, nd, Air 1/8/15/1/12; ‘List of Casualties of All Ranks Struck off the Strength of the Royal Flying Corps,’ June 1915-January 1916, Air 1/1303/204/11/171; Jones, War in the Air, II, 456-9; air combat results summary, 19 Oct. 1915, Trenchard to 2 Wing, 20 Oct. 1915, Air 1/758/204/4/119

44 No 10 Squadron air combat results summary, 26 Oct. 1915, Air 1/758/204/4/119; RFC communiqué nos 14 and 16, 10 and 16 Oct. 1915, DHist 75/413

45 No 10 Squadron air combat reports, 14 Oct., 28 Nov., 14 Dec. 1915, Air 1/1218/204/5/2634/10


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6 Cuneo, Winged Mars, II, 220-8
7 Ibid., 212-14
9 ‘Report by Captain R.A. Cooper, RFC Liaison Officer on a Visit to the French Armies at Verdun, March 12th to 19th,’ 4 April 1916, Air 1/1585/204/82/41
10 ‘Report by Commandant Du Peuty,’ 6 May 1916, Trenchard to War Office, 15 May 1916, Air 1/1303/204/11/169
11 RFC HQ record of aeroplane wastage, Air 1/2/4/26/8; summary of air combat reports, 5 Jan.-1 May 1916, summary of downed machines, from German sources, 1 Jan.-23 April 1916, Air 1/839/204/5/301
12 Haig, Private Papers, 126; order of 14 Jan. 1916, Air 1/1511/204/58/13; 25 Squadron, air combat report, 30 April 1916, Air 1/1382/204/24/16
17 Edmonds, Military Operations: France and Belgium, 1916, 1, 231; Jones, War in the Air, II, 192-5; R.A. Logan biographical file, DHist; 6 SRB, Air 1/1316/204/15/7

20 DDM A to GOC VI Brigade, 23 March 1916, Air I/131/15/40/218; Trenchard to DDM A, 28 March 1916, Air I/513/16/3/74; E.M. Roberts, *A Flying Fighter* (New York 1918), 97–146

21 W.G. Barker biographical file, DHist; DAO (War Office) to CEF HQ, 18 Oct. 1916, 8–1–121, P A C, RG 9 III, vol. 35

22 Jones, *War in the Air*, II, 198–9, 457–9; Kiggell to Trenchard, 3 June 1916, Air I/978/204/5/1139


24 RFC operation order no 392, 15 June 1916, Air I/2265/209/70/1; Jones, *War in the Air*, II, 215


26 Quoted in Martin Middlebrook, *The First Day on the Somme* (London 1971), 116


32 ‘Narrative of the Work of the 9th Wing RFC on 1 July 1916,’ 5 July 1916, Air I/759/204/4/137; G.P. Neumann, *Die deutschen Luftstreitkräfte im Weltkriege* (Berlin 1920), 472–7, DHist SGR 196, Set 4; RFC communiqué no 41, 6 July 1916, DHist 75/413; IV Brigade précis of reports, 1 July 1916, Air I/2248/209/43/12 pt I


34 IV Brigade précis of reports, July 1916, Air I/2248/209/43/12 pt I

35 No 4 SRB, Air I/2198/209/20/2

36 Ibid.
37 Trenchard to GHQ, 9 July 1916, Air 1/841/204/5/358-61; Ernst von Hoeppner, Deutschlands Krieg in der Luft (Leipzig 1921), 71-6, DHist SGR 196, Set 3; IV Brigade précis of reports, July 1916, Air 1/2248/209/43/12 pt 1; Maurice Baring, Flying Corps Headquarters, 1914-1918 (London 1968). 157; Cuneo, Winged Mars, 11, 251

38 Diary, 9 July 1916, Brophy biographical file, DHist


40 Nicholson, Canadian Expeditionary Force, 198-9

41 'Employment of Aircraft and Anti-Aircraft,' Air 1/997/204/5/1239; Trenchard to GHQ, 8 April 1917, Air 1/477/AH15/312/225

42 See Trenchard's daily summaries to GHQ, Air 1/841/204/5/358-61.

43 Diary, 11 July 1916, Brophy biographical file, DHist

44 See for example HQ II Brigade to OC 11 Wing, 24 Aug. 1916, Air 1/1282/204/10/52; Trenchard to Lambe, 1,3,5,7,27 Aug. 1916, Air 1/71/15/9/125.

45 Squadron reports on bomb dropping, Air 1/842/204/5/362


47 No 22 Squadron air combat report, 29 July 1916, Air 1/2248/209/43/12 pt 1

48 Ibid., 23 Aug. 1916

49 Peter Gray and Owen Thetford, German Aircraft of the First World War (London 1962), 87-94, 146-9, 162-5

50 RFC communiqué nos 43-54, 19 July-24 Sept. 1916, DHist 75/413; RFC squadron lists, DHist

51 T.M. Hawker, Hawker, V.C. (London 1965), 201

52 No 24 Squadron air combat reports, Air 1/1221/204/5/2634/24

53 'Notes on Formation Flying and Fighting in the Air,' Trenchard to DAO, 30 Aug. 1916, Air 1/129/15/40/191

54 IV Brigade air combat report, 20 July 1916, Air 1/2248/209/43/12 pt 1; Hawker, Hawker, V.C. 195-6

55 No 24 Squadron air combat report, 6 Aug. 1916, Air 1/169/15/160/7

56 No 24 Squadron air combat report, 14 Sept. 1916, Air 1/2248/209/43/12 pt II

57 Ibid.

58 Trenchard, 'Future Policy in the Air,' Air 1/71/15/9/125


60 A.J. Bott, Cavalry of the Clouds (New York 1918), 29

61 IV Brigade précis of reports, 15 Sept. 1916, Air 1/2248/209/43/12 pt II; V Brigade précis of reports, 15 Sept. 1916, Air 1/2224/209/40/22; 'Provisional Instructions for Co-operation between Aeroplanes and Artillery during an Advance,' C-203-2, PAC, RG 9 III, vol. 622; 9 SRB, Air 1/1233/204/6/15; V Brigade, 15 Squadron reports, Air 1/1359/204/21/9; 7 SRB, Air 1/1509/16/3/55; RFC HQ précis of squadron reports, 16 Sept. 1916, Air 1/862/204/5/479; Jones, War in the Air, 11, 276
62 Jones, War in the Air, II, 272; Baring, Flying Corps Headquarters, 175; IV Brigade précis of reports, 15 Sept. 1916, Air 1/2248/209/43/12 pt II
63 RFC HQ précis of squadron reports, 15 Sept. 1916, Air 1/862/204/5/479
64 ‘211 Res Regt at the Somme 7–18 Sep 16,’ 158, Reproduction no 10, DHist SGR I 196, Set 90
66 Trenchard to GHQ, 3 Aug. 1916, Air 1/841/204/5/358–61; Andrew Boyle, Trenchard (London 1962), 184
67 Gray and Thetford, German Aircraft, 42–7
68 Deutschland, Reichskriegsministerium, Der Weltkriege 1914 bis 1918, Band XI: Die Kriegführung im Herbst 1916 und im Winter 1916/17 (Berlin 1938), 109–10, DHist SGR I 196, Set 2; Cuneo, Winged Mars, II, 276–80
70 ‘Short Notes on Information Obtained from Units in the Somme Area,’ Turner Papers, vol. 2, file 14
72 No 7 Squadron air combat report, 20 Oct. 1916, Air 1/2224/209/40/23
73 Jones, War in the Air, II, 300–16; 49th Canadian Battalion War Diary, 15 Sept. and 7 Oct. 1916, PAC, RG 9 III, vol. 4940, folder 440; Trenchard to GHQ, 9 Nov. 1916, Air 1/841/204/5/358–61
74 RFC communiqué no 61, 9 Nov. 1916, DHist 75/413
75 Jones, War in the Air, II, 282–3; 24 Squadron air combat report, 17 Sept. 1916, Air 1/2248/209/43/12 pt II
76 Jones, War in the Air, II, 284; IV Brigade précis of reports, 19 Sept. 1916, Air 1/2248/209/43/12 pt II; quoted in Hans Jancke, Flak an der Somme (Berlin 1939), 109–16, DHist SGR I 196, Set 61; V Brigade operation order no 24, 19 Sept. 1916, Air 1/2224/209/40/22
77 No 32 Squadron air combat report, 22 Sept. 1916, ibid., 27 Squadron air combat report, Air 1/1221/204/5/2634/27
79 No 18 Squadron air combat report, 20 Oct. 1916, Air 1/2248/209/43/15
81 No 18 Squadron air combat report, 22 Oct. 1916, Air 1/2248/209/43/15
82 Jones, War in the Air, II, 309
83 No 60 Squadron air combat reports, 28 Aug. and 14 Sept. 1916, Air 1/1225/204/5/2634/60
84 Ibid., 22, 23, 30 Sept. 1916
85 Ibid., 21 Oct. 1916
86 Ibid., 9 November 1916
87 No 24 Squadron air combat report, 28 Oct. 1916, Air 1/911/204/5/835
89 Admiralty minute, 17 Sept. 1916, Air 1/2265/209/70/1; Admiralty to Air Board, 18 Sept. 1916, Air 1/513/16/3/71; ‘Memorandum for the War Committee,’ 9 Nov. 1916, Air 2/123/B I 0620: War Office to Admiralty, 29 Sept. 1916, Air 1/2265/209/70/1
90 Henderson to Haig, 8 Sept. 1916, ibid.
91 Trenchard to Henderson, 25 July 1916, Air 1/513/16/3/71; Air Board to Admiralty, 26 July 1916, Admiralty to Air Board, 5 and 26 Aug. 1916, Air 1/650/171122/431
92 Haig to War Office and Haig to Robertson, 30 Sept. 1916, Air 1/2265/209/70/1; Lambe to Trenchard, nd, Trenchard to Lambe and Trenchard to Henderson, 11 Oct. 1916, Air 1/916/204/5/871; Admiralty to War Office, 19 Oct. 1916, Air 1/513/16/3/71; War Office to Haig, 21 Oct. 1916, Air 1/520/16/12/1; Lambe to Bacon, 23 Dec. 1916, Air 1/69/15/9/113
94 Haig to War Office, 16 Nov. 1916, Air 1/520/16/12/1
95 H.A. Jones, *War in the Air*, v (London 1935), 470; order of battle, Air 1/2129/207/83/1

CHAPTER 14: STALEMATE ON THE WESTERN FRONT, 1917

5 Peter Gray and Owen Thetford, *German Aircraft of the First World War* (London 1962), 48-51
6 Trenchard to Chief of Staff, 11 Feb. 1917, Air 1/522/16/12/5
7 Admiralty to Air Board, 20 Dec. 1916, Air 1/520/16/12/1; J.M. Bruce, *British Aeroplanes, 1914-18* (London 1957), 563-8
8 Collishaw to Grange, 30 Oct. 1965, Raymond Collishaw Papers, DHist 78/132, 1-A, folder 101; Chambers to Hallahan, 10 April 1917, R.H. Mulock Papers, document 43, DHist
9 Chambers to Mulock, 13 June 1917, Mulock Papers, document 53, DHist
10 Trenchard to Senior Officer, RNAS Dunkirk, 27 June 1917, ibid., document 57
11 Collishaw to Grange, 21 May 1915, Collishaw Papers, DHist 78/132, 1–A, folder 101; letters home, 9 March and 11 April 1917, L.S. Breadner Papers, DHist 74/707, files 32 and 34; DHist squadron lists
12 DHist squadron lists; Jones, War in the Air, III, map facing 330, app. xii
13 RAF Staff College précis, 'Air Warfare,' nd, 45, Air 1/2385/228/10; HQ RFC to all brigades and 9 Wing, 26 March 1917, Air 1/1008/204/5/1283
14 HQ RFC to all brigades and 9 Wing, 26 March 1917
15 Ibid.; Jones, War in the Air, III, 334, 360
16 Jones, War in the Air, III, 354–5, 360; RAF Staff College précis, 'Air Warfare,' nd, 44–5, Air 1/2385/228/10; 1 Brigade work summary, April 1917, Air 1/768/204/4/252
17 Bruce, British Aeroplanes, 426–38
20 1 Brigade to HQ RFC and attached plan, 26 March 1917, Air 1/1008/204/5/1283
22 Floyd Gibbons, The Red Knight of Germany: Baron von Richthofen, Germany's Great War Airman (London 1930), 126–7; 1 Brigade work summary, 27–28 March 1917, Air 1/767/204/4/251; 16 Squadron air combat reports, 6 and 11 March 1917, Air 1/1219/204/5/2634/16; RFC communiqué nos 74, 78, DHist 75/413
23 1 Brigade work summary, April 1917, Air 1/768/204/4/252; Jones, War in the Air, III, 356, 365
24 War diary, 1 Brigade, Canadian Field Artillery, 7 and 12 March 1917, folder 527, PAC. RG 9 III, vol. 4963
25 War diary, 2nd Canadian Divisional Artillery, 11 March and 5 April 1917, folder 510, ibid., vol. 4959
26 War diary, 11 Brigade, Canadian Field Artillery, 3 April 1917, folder 529, ibid., vol. 4964; war diary, 3rd Canadian Siege Battery, 6 April 1917, folder 570, ibid., vol. 4976
27 No 16 SRB, 9 April 1917, Air 1/1343/204/19/15; 1 Brigade work summary, April 1917, Air 1/768/204/4/252
28 W.A. Bishop, Winged Warfare: Hunting the Huns in the Air (London 1918), 93–4
29 'Policy in the Air,' attached to Kiggel to distribution, 9 April 1917, Air 1/522/16/12/5
30 Jones, War in the Air, I, app. xii; DHist squadron lists
32 W.A. Bishop biographical file, DHist
33 No 60 Squadron air combat report, 25 March 1917, Air 1/1225/204/5/2634/60
34 Ibid., 30 April 1917; Bishop biographical file, DHist
35 RFC war diary, 11 April 1917, Air 1/1185/204/5/2595; J.S.T. Fall biographical file, DHist
37 Letter home, 23 April 1917, L.S. Breadner Papers, DHist 74/707, file 35
38 Ibid.: RFC war diary, 23 April 1917, Air 1/1185/204/5/2595; J.J. Malone biographical file, DHist
39 'Number of Machines Employed on Each Front and Casualties in France Only,' nd, RFC war diary, 9 May 1917, Air 1/1008/204/5/1283; H.A. Jones, War in the Air, IV (London 1934), 111-13, app. III. See also Sir Gordon Taylor, Sopwith Scout 7309 (London 1968), 103-18.
40 Canadian Bank of Commerce, Letters from the Front: Being a Record of the Part Played by Officers of the Bank in the Great War, 1914-1919, C.L. Foster and W.S. Duthie, eds. (Toronto [1920-1921]), 1, 210
42 II Brigade work summary, 6-7 June 1917, Air 1/768/204/4/254; Jones, War in the Air, IV, 114-15, 118
43 Correspondence and instructions on wireless intelligence of hostile aircraft, 24 Oct. 1916-25 May 1917, Air 1/526/16/12/38
44 Scott, Sixty Squadron R.A.F., 59
45 Ibid., 58-9; Jones, War in the Air, IV, 119-20
47 Edmonds, Military Operations: France and Belgium, 1917, II, 70; 'Resume of the Wireless Organization of the 2nd Wing, R.F.C. Previous to and During the Offensive Operations of the Second Army in June, 1917,' 11 June 1917, Air 1/1007/204/5/1271; II Brigade work summary, 6-7 June 1917, Air 1/768/204/4/254; 42 Squadron air combat report, 7 June 1917, Air 1/1222/204/5/2634/42; Jones, War in the Air, III, 310, IV, 129-30, 132, 410, 413; Maurice Baring, Flying Corps Headquarters, 1914-1918 (London 1968), 228
48 DHist squadron lists
49 R.V. Dodds, historical sketch of 210 Squadron RAF [10 (Naval)], DHist 73/1552; Raymond Collishaw biographical file, DHist; letter to Vice-Admiral Dover Patrol, 19 April 1917, Lambe to RNAS Dunkirk, 16 May 1917, Lambe to Vice-Admiral Dover Patrol, 23 Aug. 1917, Air 1/637/17/122/142
50 Collishaw's air combats and logbook, Collishaw Papers, DHist 78/132, 1-A, folder 35; RFC communiqués nos 91-4, June 1917, DHist 75/413
51 No 10 (Naval) Squadron air combat report, 17 June 1917, Air 1/1219/204/5/2634/10
52 DHist squadron lists; R. Collishaw, with R.V. Dodds, Air Command: a Fighter Pilot's Story (London 1973), 79, 100
53 William Arthur Bishop, The Courage of the Early Morning: a Son's Biography of a Famous Father (Toronto 1965), 97-100
54 No 60 Squadron air combat report, 2 June 1917, Air 1/1225/204/5/2634/60
56 Jones, *War in the Air*, iv, 129–30
61 Bruce, *British Aeroplanes*, 126–30
62 Ibid., 445–55
63 Ibid., 573–6; Gray and Thetford, *German Aircraft*, xxx, 52–5
65 Macmillan, *Into the Blue*, 125–6
67 Extracts from iii Brigade war diary, June and July 1917, v Brigade war diary, July 1917, Air 1/721/48/2; H.E. Creagan, ‘W.M. Alexander of Black Flight, Naval 10,’ *CAHS Journal*, iii, fall 1965, 64
71 H. von Bülow, *Geschichte der Luftwaffe* (Frankfurt 1937), 95; Arndt, ‘Die Fliegerwaffe,’ 343–6, sketches 225a and b
73 Sir Hubert Gough, *The Fifth Army* (London 1931), 203; extracts from v Brigade war diary, Aug. 1917, Air 1/721/48/2
77 ‘Number of Machines Employed on Each Front and Casualties in France Only,’ nd, Air 1/516/16/6/1; Haig to CIGS, 13 Aug. 1917. Trenchard to SORMNAS, Dunkirk, 21 Aug. 1917, Air 1/913/204/5/851


79 Jones, *War in the Air*, iv, 176–9

80 Report on bomb raid, 16 Aug. 1917, Air 1/917/204/5/875

81 RFC war diary, 16 Aug. 1917, Air 1/1185/204/5/2595; G.S.B. Fuller, ‘Reminiscences,’ 41


86 Ibid., 206–7

87 Oliver Stewart, *Words and Music for a Mechanical Man* (London 1967), 130–1;


88 ‘Number of Machines Employed on Each Front and Casualties in France only,’ nd, Air 1/516/16/6/1


90 11 Brigade operations order, 17 Sept. 1917, Air 1/931/204/5/927; Scott, *Sixty Squadron R.A.F.*, 72–3

91 Maxse to Fifth Army, 21 Aug. 1917, XVIII Corps GS70, Maxse Papers, Imperial War Museum, file 39; Kiggell to Army HQS, 12 Aug. 1917, Trenchard to GS. GHQ, 19 Sept. 1917, Air 1/971/204/5/1111


95 Extracts from v Brigade war diary, Sept. 1917, Air 1/721/48/2

96 No 1 (Naval) SRB, 20 Sept. 1917, Air 1/40/15/9/9


100 Jones, *War in the Air*, iv, 99–100
101 ‘Operations of 100 Squadron with Canadians Taking Part,’ nd, Air 1/721/48/2; Charteris, *At G.H.Q.*, 263
102 Extracts from brigade war diaries, Sept. 1917, Air 1/721/48/2
103 Jones, *War in the Air*, iv, 198–200
104 R.T.C. Hoigde biographical file, DHist; James Thomas Byford McCudden, *Five Years in the Royal Flying Corps* (London [1918]), 240–3
105 RFC communiqué no 107, 3 Oct. 1917, DHist 75/413; Holt to GOC v Brigade RFC, 1 Oct. 1917, Air 1/913/204/5/851
106 Holt to GOC v Brigade RFC, 1 Oct. 1917
108 Boyle, *Trenchard*, 81–2; Trenchard to GS, Advanced GHQ, 13 Nov. 1917, Air 1/913/204/5/851
110 Ibid., 264
111 W.S. Douglas’ Staff College essay, 15 Oct. 1922, Air 1/2386/228/11/13
112 DHist squadron lists
115 v Brigade to Second Army, 24 Oct. 1917, ‘Canadian Corps GS,’ 111, ibid., vol. 1; G.B.A. Baker’s Staff College essay, 10 Aug. 1926, Air 1/2389/228/11/97
117 Extracts from v Brigade war diary, Oct. 1917, Air 1/721/48/2
118 Ibid.; annex to v Brigade war summary, 19–20 Oct. 1917, Air 1/770/204/4/258
120 Ibid., 188
121 Curtis to Dodds, 31 July 1962, W.A. Curtis biographical file, DHist
123 RFC war diary, 26 Oct. 1917, Air 1/1186/204/5/2595
125 ‘72nd Canadian Infantry Battalion,’ 2, DHist 112.3H1.009 (d259), vol. II; RFC war diary, 30 Oct. 1917, Air 1/1186/204/5/2595; III Brigade work summary, 30–31 Oct. 1917, Air 1/770/204/4/258
127 Nicholson, *Canadian Expeditionary Force*, map 9
128 Jones, *War in the Air*, IV, 211–12; RFC war diary, Air 1/1186/204/5/2595
129 Singer, *History of the Thirty-First Battalion*, 268; ‘1st Battalion,’ 6, DHist 112.3H1.009(D259), vol. II
130 ‘31st Canadian Infantry Battalion,’ 3, DHist 112.3H1.009(D259), vol. II
131 Nicholson, *Canadian Expeditionary Force*, 325, map 9
132 Ibid., 325–6; RFC war diary, 10 Nov. 1917, Air 1/1186/204/5/2595
133 *Statistics of the Military Effort of the British Empire*, 326–7
134 J.F.C. Fuller, *Tanks in the Great War, 1914–1918* (London 1920), 140
135 Jones, *War in the Air*, IV, 230–1
136 No 3 SRB and war diary, Air 1/166/15/142/19; Pretyman to Wing cos., 19 Nov. 1917, Air 1/1431/204/31/31; Lee, *Open Cockpit*, 154
137 Jones, *War in the Air*, IV, app. XI
140 Jones, *War in the Air*, IV, 235–6, 432
141 No 3 SRB and war diary, Air 1/166/15/142/19
142 III Brigade work summary, 20–21 Nov. 1917, Air 1/770/204/4/259
145 No 84 Squadron air combat report, 22 Nov. 1917, Air 1/1797/204/155/8; P.J. Carisella and James W. Ryan, *Who Killed the Red Baron? The Final Answer* (Wakefield, Mass. 1969), 56, 246
146 III Brigade work summary, 22–23 Nov. 1917, Air 1/770/204/4/259; Jones, *War in the Air*, IV, 244–5
147 Jones, *War in the Air*, IV, 247
148 Ibid., 247–8; J.C. Slessor, *Air Power and Armies* (London 1936), 91
151 III Brigade work summary, 29–30 Nov. 1917, Air 1/770/204/4/259; 64 Squadron history, Air 1/173/15/182/1; 11 Squadron air combat report, 30 Nov. 1917, Air 1/1219/204/5/2634/11; A.E. McKeever biographical file, DHist
152 Bank of Commerce, *Letters from the Front*, 1, 261–2
153 Ibid.
154 RFC war diary, 30 Nov.–3 Dec. 1917, Air 1/1186/204/5/2595
155 No 2 Squadron air combat reports, 18 and 19 Dec. 1917, Air 1/1216/204/5/2634/2
156 Reed, *Insanity Fair*, 39–40
Notes to Pages 448–56

158 ‘Functions and Tactics of German Air Service, Spring of 1917, Particularly during Arras Battle April-May, 1917’ [1924]. Air 1/9/15/1/22; nominal rolls of Canadians undergoing or graduating from RFC flying training, late 1917, OMFC C-985-33, PAC RG 9 III, vol. 2741; extracts from Statistical Abstract No 23, Section 1, ‘Growth of the Royal Flying Corps,’ Air 1/2314/223/10/1. For RNAS reinforcements see Lambe to Vice-Admiral Dover Patrol, 23 Aug. 1917, Air 1/637/17/122/142.

CHAPTER 15: ITALY AND MACEDONIA, 1917–18

3 H.A. Jones, Over the Balkans and South Russia: the History of 47 Squadron RAF (London 1923), 17, 24
4 Owen biographical file, DHist; F.S. Mills and H.V. Reid biographical cards, DHist; Jones, War in the Air, v, 342–3, 378–9
6 Jones, War in the Air, v, 346–9
7 A.G. Goulding biographical file, DHist; 17 Squadron air combat reports, 13, 22, 25 April and 28 June 1917, Air 1/2353/226/4/105 pt I
8 Jones, War in the Air, v, 362
9 No 17 Squadron air combat report, 5 Oct. 1917, Air 1/2353/226/4/105 pt I
10 Bruce Robertson, ed., Air Aces of the 1914–1918 War (Letchworth, Herts. 1959), 117
11 Ibid., 198–9; Gunther Rothenburg, ‘Military Aviation in Austro-Hungary, 1893–1918,’ Aerospace Historian, xix, June 1972, 81
15 Sir Philip Joubert, ‘How Billy Barker won his v.c.’ Weekend Magazine, 25 May 1963, 43; Row to Dodds, 5 Nov. 1962, W.G. Barker biographical file, DHist
16 No 28 Squadron air combat report, 3 Dec. 1917, copy extract from Air 204/213/15, ibid.
18 No 66 SRB, 15–16 Dec. 1917, Air 1/1575/204/80/76; Jones, War in the Air, vi, 277; T.F. Williams biographical file, DHist
19 Jones, War in the Air, vi, 277
20 Taped interview with T.F. Williams, 1 Feb. 1971, Williams biographical file, DHist
21 London Gazette, 15 March 1918, 30583; Flight, 28 March 1918, 332; 17 Squadron patrol report, 24 March 1918, Air 1/2353/226/4/105 pt 1
22 Jones, War in the Air, v, 366; 150 Squadron air combat report, 28 May 1918, Air 1/2353/225/4/105 pt 1
23 150 Squadron air combat report, 1 June 1918, Air 1/2353/225/4/105 pt 1
24 Ibid., 1, 12, 15, 18, 20, 23, and 28 June 1918; Edmonds, Military Operations: Macedonia, ii (London 1935), 99–100; Jones, Over the Balkans, 107
26 Jones, War in the Air, vi, 300–1; 150 Squadron air combat reports, 1, 2, and 3 Sept. 1918, Air 1/2353/225/4/105 pt 1
27 vii Brigade instruction, 2 Jan. 1918, and vii Brigade letter G 9/8, 4 Jan. 1918, Air 1/1665/204/98/43
29 Interview, Williams biographical file, DHist
30 Ibid.
31 No 28 Squadron air combat report, 24 Jan. 1918, Air 1/1854/204/213/15
32 Ibid., 2 Feb. 1918
33 No 45 Squadron air combat report, 2 Feb. 1918, Air 1/1786/204/151/1; list of EA shot down and out of control, Air 1/1665/204/98/40
34 No 66 SRB, 4 and 6 Feb. 1918, Air 1/1575/204/80/76; list of EA shot down, 4 Feb. 1918, Air 1/1665/204/98/40; University of Toronto, University of Toronto Roll of Service, 1914–1918, G. Oswald Smith, ed. (Toronto 1921), 94, 190; 28 Squadron air combat report, 5 Feb. 1918, Air 1/1854/204/213/15
35 No 28 Squadron air combat report, 12 Feb. 1918, Air 1/1854/204/213/15; London Gazette (Supplement), 18 Feb. 1918, 2157
36 No 34 SRB, Nov. 1917, Air 1/1392/204/26/14
37 Ibid., Dec. 1917
38 No 34 SRB, 4 Jan. and 13 March 1918, Air 1/1393/204/26/15
Notes to Pages 464-73

40 Edmonds, Military Operations: Italy, 1915–1919, 158–66; Jones, War in the Air, vi, 280–1
41 Lamberton, Reconnaissance and Bomber Aircraft, 62, 214–15; J.M. Bruce, British Aeroplanes, 1914–1918 (London 1957), 135, 434, 578; vii Brigade instruction, 17 March 1918, Air 1/1665/204/98/43
42 List of EA shot down, 10, 18, and 24 March 1918, Air 1/1665/204/98/40; 66 SRB, 18 and 24 March 1918, Air 1/1575/204/80/76; Williams biographical file, DHist
43 Williams biographical file; London Gazette, 16 Sept. and 2 Nov. 1918, 11035, 12978; 66 Squadron air combat report, 17 April 1918, Air 1/1788/204/151/6; 34 SRB, 17 April 1918, Air 1/1394/204/26/16; 28 Squadron air combat reports, 2, 3, 4, 9, 13, 19, 21, 23, 26, 30, and 31 May 1918, Air 1/1854/204/213/15; 66 SRB, 17 April, and 1, 2, 3, 4, 5, 6, 8, 13, 19, 20, 21, 23, 24, 30, and 31 May 1918, Air 1/1575/204/80/77; 66 Squadron air combat reports, 8 and 11 May 1918, copy extracts from AH 204/80/63, Barker biographical file, DHist
44 No 66 Squadron air combat reports, 24 May 1918, AH 204/80/63
45 No 66 SRB, 14 March 1918, Air 1/1575/204/80/76
46 ‘G.H.Q. Reconnaissance by 34 Squadron R.A.F. 2nd May 1918,’ Air 1/1394/204/26/16
47 No 34 SRB, 23 April and 7 June, ibid.
48 Ibid., 3 and 10 May and 10 June 1918
49 Ibid., 10 May, 1 and 10 June 1918
51 No 66 SRB, 15 June 1918, Air 1/1575/204/80/77
53 Interview, Williams biographical file, DHist
54 Jones, War in the Air, vi, 284
55 No 34 SRB, 16 June 1918, Air 1/1394/204/26/16
56 No 66 air combat report, 16 June 1918, extract from AH 204/80/44, Barker biographical file, DHist; 34 SRB, 16 June 1918, Air 1/1394/204/26/16
57 Ibid., 18 June 1918
58 Edmonds, Military Operations: Italy, 1915–1919, 222–37
61 Jones, War in the Air, vi, 280
63 Joubert to Secretary, Air Ministry, report of bomb raids, 4–8 Oct. 1918, Air 1/1985/204/273/97; 28 Squadron air combat reports, 4 and 5 Oct. 1918, Air 1/1854/204/213/15; 66 SRB, 4–5 Oct. 1918, Air 1/1575/204/80/77; London Gazette, 3 Dec. 1918, 14316, 31046; Jones, War in the Air, vi, 288
64 Jones, War in the Air, vi, 289–90; Edmonds, Military Operations: Italy, 1915–1919, 266–7
66 Jones, War in the Air, vi, 290–1; 14 Wing branch intelligence reports of 139 Squadron from 14 Oct. 1918, Air 1/1576/204/80/81
71 No 28 SRB, 29 Oct. 1918, Air 1/1853/204/213/4; *London Gazette*, 2 Nov. 1918 and 8 Feb. 1919, 12978, 31170
72 No 66 SRB, 30 Oct.–2 Nov. 1918, Air 1/1779/204/148/28
73 H.R. Sandilands, *The 23rd Division, 1914–1919* (Edinburgh 1925), 330
74 J.F. Gathorne-Hardy, 'A Summary of the Campaign in Italy and an Account of the Battle of Vittorio Veneto,' *Army Quarterly*, 111, Oct. 1921, 34
76 No 150 Squadron air combat report, 18 Sept. 1918, Air 1/2353/226/4/105 pt 1; Jones, *War in the Air, VI*, 305
77 Todd to HQ RAF Middle East, 3 March 1919, 'History of 16th Wing,' Air 1/153/15/122/1

CHAPTER 16: THE LUENDORFF OFFENSIVES, 1918

6 Johnson to CAS, 28 Dec. 1962, G.O. Johnson biographical file, DHist
7 No 16 SRB, Jan. 1918, Air 1/1347/204/19/37
8 Sitwell to Wurtele, 6 Jan. 1918, Air 1/175/15/183/3
9 No 65 SRB, 4 Jan. 1918, ibid.
10 No 9 Wing orders, 14–21 March 1918, Air 1/882/204/5/604; RAF squadron histories, DHist 73/1552; Jones, *War in the Air, IV*, 265–6, 268, 271–2
11 Jones, *War in the Air, IV*, 279; Deutschland, Oberkommandos des Heeres, *Der Weltkrieg 1914 bis 1918*, Band XIV: *Die Kriegführung an der Westfront im Jahre 1918* (Berlin 1944), 47, DHist SGR 1 196, Set 2
12 MacLaren logbook, D.R. MacLaren biographical file, DHist