EIGHTY-SIX CERTIFIED FLIGHT PILOTS.

BELOW we reproduce in full the imposing list of holders of "pilote-aviateur" certificates issued by the Aero Club of France up to the present time, whilst there must be close upon as many again about ready to pass the requisite tests to secure the coveted certificate. It will be noticed that the list includes no less than 86 names, among them being M. Delagrange, Capt. Ferber, and M. Le Blon, who have since been numbered amongst the martyrs in the great cause :—

1. Louis Blériot (Blériot)
2. Glen Curtiss (Curtiss)
3. Leon Delagrange (Blériot)
4. Robert Esnault - Pelterie (R.E.P.)
5. Henry Farman (H. Farman)
5A. Capt. Ferber (Voisin)
6. Maurice Farman (M. Farman)
7. Jean Gobron (Voisin)
8. Comte Charles de Lambert (Wright)
9. Hubert Latham (Antoinette)
10. L. Paulhan (H. Farman)
11. Henry Rougier (Voisin)
12. Santos-Dumont ("Demoiselle")
13. Paul Tissandier (Wright)
14. Orville Wright (Wright)
15. Wilbur Wright (Wright)
16. Etienne Bunau-Varilla (Voisin)
17. Alfred Leblanc (Blériot)
18. Julien Mamet (Blériot)
19. Rene Metrot (Voisin)
20. Prince Bibesco (Blériot)
21. Emile Aubrun (Blériot)
22. Jacques Balsan (Blériot)
23. Hon. Charles S. Rolls (Wright)
24. Mortimer Singer (H. Farman)
25. Leon Molon (Blériot)
26. Henri Bregi (Voisin)
27. Jacques de Lesseps (Blériot)
28. Ernest Zens (Blériot)
29. Roger Sommer (Sommer)
30. C. Grahame-White (H. Farman)
31. Michel Efimoff (H. Farman)
32. Geo. Chavez (H. Farman)
33. Lieut. Camerman (H. Farman)
34. De Riemsdyk (Curtiss)
35. Edmond Morelle (H. Farman)
36. Mme. Raymonde de La Roche (Voisin)
37. Van den Born (H. Farman)
38. Hubert Le Blon (Blériot)
39. Rene Gasnier (Wright)
40. J. T. Moore-Brabazon (Voisin)
41. Maurice Herbster (H. Farman)
42. Fernand Deletang (Blériot)
43. Andre Crochon (H. Farman)
44. Capt. Burgeat (Antoinette)
45. Lieut. Bellenger (H. Farman)
46. G. P. Kuller (Antoinette)
47. Emile Dubonnet (Tellier)
48. Alfred Frey (H. Farman)
49. Marcel Baratoux (Wright)
50. Nicolas Popoff (Wright)
51. Vincent Wiesenbach (H. Farman)
52. Louis Breguet (Breguet)
53. Charles Louis Wachter (Antoinette)
54. Leon Morane (Blériot)
55. Georges Legagneux (Sommer)
56. Rene Toussin (Blériot)
57. Elie Mollien (Blériot)
58. Walter de Mumm (Antoinette)
59. Louis Gaubert (Wright)
60. Victor Rigal (Voisin)
61. Henri Jullerot (H. Farman)
62. Leon Cheuret (H. Farman)
63. Lieut. A. Fequant (H. Farman)
64. Rene Barrier (H. Farman)
65. Lieut. Sido (H. Farman)
66. Henri Sallenave (Blériot)
67. Bruneau de Laborie (H. Farman)
68. Lieut. Aquaviva (Blériot)
69. Comte de Montigny (Blériot)
70. Hayden Sands (Antoinette)
71. Capt. Bertram Dickson (H. Farman)
72. W. McArdle (Blériot)
73. Henri Weiss (Blériot)
74. Baron Carl de Cederstroem (Blériot)
75. Graham Gilmour (Blériot)
76. Mignot (Voisin)
77. Didier (H. Farman)
78. Capt. Marie (H. Farman)
79. Martinet (H. Farman)
80. Tetard (H. Farman)
81. Ladougne (Goupy)
82. R. Jourdain
83. N. Kinet (H. Farman)
84. H. G. Laignier
85. E. Farnier (Caudron)
86. Jules Bessonneau

THE GERMAN AERIAL FLEET.

So much activity has taken place in Germany on the construction of dirigibles, and so many airships have been constructed and proposed at one time and another in that country, that it is a little difficult to exactly estimate what does and does not exist at the present time. The following table, which has been published by our French contemporary *l'Intransegeant*, purports to be a correct statement of the present German aerial fleet, based on statistics compiled by an officer of the French Army :—

Name.	Capacity.	H.P.	Military.	Private.	Remarks.
	cub. m.				
Zeppelin (1)	11,300	80	—	—	Dismantled for the construction of Zeppelin (2).
Zeppelin (2)	10,400	170	—	—	Destroyed in a storm at Algau (Jan., 1906).
Zeppelin I (3)	12,000	170	1	—	Stationed at Metz.
Zeppelin (4)	13,000	220	—	—	Destroyed at Echterdingen in Aug., 1908.
Zeppelin II (5)	15,000	230	—	—	Destroyed at Weilburg, April 25th, 1910.
Zeppelin III (6)	15,000	270	—	1	Refused by the military authorities in 1909.
Parseval I	4,000	90	1	—	Stationed at Metz.
Parseval II	3,200	100	1	—	At Cologne.
Parseval III	6,700	200	1	—	At Bitterfeld.
Parseval IV	3,200	200	—	1	Public service.
Parseval V	1,200	25?	—	1	Sporting dirigible.
Gross I (or M–I)	5,200	150	1	—	Stationed at Berlin Balloon School after numerous alterations.
Gross II (or M–II)	5,200	150	1	—	Cologne.
Gross III (or M–III)	6,700	300	1	—	Berlin.
Leichlingen (Rhein, Westph.)	2,900	125	—	—	Destroyed in Dec., 1909.
Clouth	1,700	—	—	1	At Cologne, given poor results
Erbsloh	2,900	—	—	1	Not completed.
Ruthemberg	1,200	—	—	—	Destroyed in March, 1910.
Bilderbrandt	2,000?	—	—	1	Not completed.
Kiel	2,500?	—	—	1	Not completed.

This gives a total of 7 military and 7 private.

The airships under construction in Germany are as follows :—

Zeppelin IV (7)	19,000	340	—	1	Electrone metal. Intended for public service.
Zeppelin V (8)	20,000	360	—	1	
Parseval VI	6,700	—	1?	—	
Parseval VII	6,700	—	1?	—	
Parseval VIII	1,200	?	—	1	Sporting dirigible.
Parseval IX	5,000	?	—	1	Public service.
Gross IV	12,000	400	1	—	
Schutte	19,500	500	—	1	Rigid, at Mannheim.
Trives	19,000	480	—	1	Rigid, at Dantzig.
Siemens-Schuckert	15,000	500	—	1	Non-rigid, at Nounendamm.
Ruthemberg	small	500	—	1	Sporting dirigible.
Ruthenberg	small	500	—	1	,,
Ganes-Fabrice	small	—	—	1	,,

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THE SMITH-DOREY VALVE.

THE accompanying illustration shows an exceptionally interesting valve, specially designed for use with aero engines by G. H. Smith and W. H. Dorey, Ltd.

It is claimed for this valve that although possessing the advantages of a nickel valve, it has not the disadvantages usually associated with the latter type of valve.

With valves made of nickel, as no doubt most of our readers know, the stems are somewhat weak and are apt to break without warning. For aeronautical work in particular this is a point of considerable importance, as it would possibly lead to serious consequences. On the other hand, the nickel valve has the one great advantage that it requires very little grinding in and cleaning.

Diagrammatic sketch showing the Smith-Dorey valve in section, the shaded portion being the pure nickel seating.

In the Smith-Dorey valve the seating portion is of pure nickel, whilst the body of the head and the stem are constructed of 3 per cent. nickel steel, thus securing great strength where it is most required. It will be seen, therefore, that by the combination the above-mentioned difficulties are overcome. The makers can supply these valves to manufacturers and others to comply with any special design.

It should be mentioned that the nickel seating is set into the valve-head by means of a special patented process, whereby a very tight joint is obtained.