

## Why Wright brothers failed to receive Nobel Prize recognition?

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*The demonstration of the first human flight in a power operated airplane in 1903 was an event unmatched in the annals of 20th century science and deserved a Nobel Prize in physics. To commemorate the death centenary of Wilbur Wright (1867–1912), the elder sibling of the Wright brothers, I offer six postulates on why their invention failed to receive Nobel Prize recognition in 1909 and 1913. Wright brothers did receive 16 nominations cumulatively in 1909, but only 2 nominations cumulatively in 1913. For 1909 prize, their French rivals in aviation Henry Farman and Gabriel Voisin also received 16 nominations cumulatively.*

30 May 2012 marked the death centenary of Wilbur Wright (1867–1912), the eldest of the Wright siblings, who are now appropriately acclaimed as the pioneers in human aviation. On 30 May 1912, Bishop Milton Wright (1828–1918), his father, recorded the death of his son in his diary as follows:

‘This morning, at 3 : 15, Wilbur passed away, aged 45 years, 1 month and 14 days. A short life, full of consequences. An unfailing intellect, imperturbable temper, great self reliance and as great modesty, seeing the right clearly, pursuing it steadily, he lived and died. Many called – many telegrams (probably over a thousand).’<sup>1,2</sup>

Sixty-four years after his death, Wilbur Wright’s personality has been described by his niece Ivonette Miller in a memoir as follows: ‘Wilbur was quite, often incommunicative. When he had something on his mind, he could cut himself off from everyone. At times he was unaware of what was going on around him. He was a constant reader, with a retentive mind with which he could recall facts he had read many years before. He wrote with great simplicity and clarity. Writing was a pleasure to him.’<sup>2</sup> By tracing the life events of the Wright brothers, Tipton and Mohler<sup>3</sup> inferred that while Wilbur Wright had left-hemispheric dominance of the brain, his younger sibling Orville Wright’s brain had a right-hemispheric dominance. Due to these complementary skills, both were able to succeed as a ‘unique team’, despite their handicaps of having no external support in finances and building their own original flying machine by incorporating commonly available materials. In hindsight, it seems now that the demonstration of the first human flight in a power-operated airplane on 17 Decem-

ber 1903 was an event unmatched in the annals of 20th century science<sup>4–11</sup> and deserved a Nobel Prize in physics.

When the census of the nominees and nominators for the Nobel Prize in physics for the first 37 years were released publicly in 1987, I was surprised to note that for the 1909 and 1913 physics prize, Wright brothers were in fact nominated<sup>12</sup>. But, they lost out to G. Marconi and F. Braun in 1909 and H. Kamerlingh Onnes in 1913. I checked the *Web of Knowledge* database (<http://apps.webof-knowledge.com/>) using the search terms ‘Wright brothers’ and ‘Nobel Prize’ on 1 June 2012, and found that none had considered the relevance of finding an answer to the question posed in the title of this note. As such, I provide six postulates on why Wright brothers were unsuccessful on both occasions.

### Nominators and rivals of Wright brothers

For the 1909 physics prize, Wright brothers cumulatively received 16 nominations from eight European scientists<sup>12</sup>. Among these, 6 were from Sweden (if one includes Sweden-born Oskar Backlund, who worked in Russia, and thus tagged as a Russian in the Nobel nomination records) and two were from France. Their mini-biographical details are as follows: Oskar Backlund (1846–1916): Sweden-born astronomer–mathematician; Ivor Otto Bendixson (1861–1935): Swedish mathematician; Vilhelm Carlheim–Gyllenskold (1859–1934): Swedish physicist; Erik Ivar Fredholm (1866–1927): Swedish mathematician; Magnus Gustaf Mittag–Leffler (1846–1927): Swedish mathematician; Paul Painleve (1863–1938): French mathematician; Edvard Phragmen (1863–1937): Swedish

mathematician; Henri Poincaré (1854–1912): French polymath.

We can note that with the exceptions of Poincaré and Carlheim–Gyllenskold, other six were mathematicians. For the 1913 Nobel Prize in physics, Wright brothers received a solitary nomination by Vincenz Czerny (1842–1916), who was an Austrian–German surgeon. But, Czerny’s field of expertise was not in either aeronautics or physics!

Rivals of the Wright brothers for the 1909 physics prize in the category of aviation were two French aviation pioneers Gabriel Voisin (1880–1973) and Henri Farman (1878–1958), who cumulatively received 16 nominations<sup>12</sup>. Astronomer George Ellery Hale (1868–1938), the only American rival for the Wright brothers, received 7 nominations for the 1909 Nobel physics prize and a single nomination for the 1913 Nobel physics prize<sup>12</sup>. Being an academic, one of Hale’s 1909 nominator was Albert Michelson, who did receive the 1907 Nobel physics prize. In contrast to the lowly academic standing of the Wright brothers, astronomer Hale also functioned as a nominator for Nobel physics prize in 1901, 1902, 1907, 1914, 1916, 1919 and 1922.

The members of the Nobel Committee for physics, who served during the 1909 and 1913 years, when Wright brothers were nominated are listed below, with their respective years of service<sup>12</sup>. Knut Angstrom (1900–1910); Svante Arrhenius (1900–1927); Vilhelm Carlheim–Gyllenskold (1910–1934); Gustaf Granqvist (1904–1922); Bernhard Hasselberg (1900–1922); Hugo Hildrebransson (1900–1910); Robert Thalen (1900–1903).

Among these seven, it should be noted that Arrhenius was awarded the Nobel Prize in chemistry in 1903. Carlheim–Gyllenskold had nominated Wright brothers for the 1909 physics prize,

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before he became the member of the Nobel Committee for physics in 1910.

### Commentary

My six postulates for why Wright brothers lost out in the Nobel recognition are as follows.

(1) In the early 20th century, the centre of gravity in science and technological research was located in Europe and not in the USA. This is visible, if one counts the number of nominees and number of nominations for the physics prize in 1909 and 1913 (Tables 1 and 2)<sup>12</sup>. If Orville Wright and Wilbur Wright are counted individually (rather than as a single unit), for the 1909 prize (Table 1), there were 18 nominees from Europe and only 3 (Wright brothers and George Ellery Hale) from USA. Among the total of 76 nominations received for the 1909 prize, the same 3 from USA received a total of 23 nominations, as opposed to the 15 from Europe who garnered 53 nominations. The same pattern was repeated in 1913 as well (Table 2), there were 23 nominees from Europe and only 3 (Wright brothers and George Ellery Hale) from USA. Among the total of 52 nominations, the same 3 from USA received only 3 nominations, as opposed to 49 nominations received by their European rivals.

(2) Though three of their siblings (two elder brothers and the younger sister) had received college education, Wilbur and Orville opted not to continue their education in college<sup>13,14</sup>. Thus, they lacked the opportunities for networking in the first decade of the 20th century and had restricted influential contacts in Europe. This is indirectly visible by the Nobel Prize nominator status received by the competitors of Wright brothers for the year 1909. Among the 21 nominees, 12 (C. Braun, G. E. Hale, H. Kamerlingh Onnes, F. Kohlrausch, G. Marconi, M. Planck, H. Poincaré, J. H. Poynting, A. Righi, H. Rubens, J. van der Waals and W. Wien) had also served as nominators for the Nobel Prize previously or subsequently<sup>12</sup>. Wright brothers were not invited by the Nobel Prize committee to serve as nominators.

(3) Litigation claims made by their competitors in USA and Europe probably weakened the case for the Wright brothers<sup>13,14</sup>.

(4) The eventual winners in 1909 and 1913 did receive previous nominations<sup>12</sup>. In 1909, when the Wright brothers had the best opportunity to be selected, their rivals had received previous nominations. Marconi was a nominee for the physics prize in 1901, 1902, 1903 and 1908. Braun also received previous nominations in 1905 and 1906.

(5) Premature death of Wilbur Wright in 1912, probably weakened the 1913

nomination for the Wright brothers<sup>12,13</sup>. The fact that their sole nominator Vincenz Czerny was a surgeon and not a specialist in the field of aeronautics or physics also could have added to the irony.

(6) The influence of peace (or anti-war) lobby on the notoriety of military aviation and its reflective effect on the Nobel selection committee should not be discounted as well<sup>15</sup>. The 1905 Nobel Peace Prize was awarded to Baroness Bertha von Suttner, an acquaintance of Alfred Nobel, who did secretarial work for him for a short duration. Referring to American interest on military aeronautics during the early years from 1908 to 1914, Reber<sup>16</sup> wrote 'Our own country was the first to realize the military importance of the aeroplane, and in 1907 the War Department issued specifications and proposals covering the construction of an aeroplane for the military service. In 1908, in the trials at Fort Myer, Va., due to an unfortunate accident, Lieutenant Selfridge was killed and Mr Orville Wright injured and activities were suspended until the following year, when the Wright brothers demonstrated their machine, which was accepted by the government.'

It could also be added that the peer-reviewed 'publications' *per se* by the Wright brothers were also relatively sparse. Jakab and Young<sup>17</sup> had compiled a total of 69 documents published by Wright brothers. Among these, only five appeared before the nomination day of the 1909 Nobel Prize. These five (listed below chronologically from 6 January 1904 to September 1908) includes a press statement and a circular statement to the Aero Club of America.

(1) Statement by the Wright brothers to the Associated Press (*Dayton Press*, 6 January 1904): providing details relating to the landmark flight on 17 December 1903.

(2) Statement to the Aero Club of America (circular, Aero Club of America, 12 March 1906): providing details relating to the longer flight times and distance during 1904 and 1905. As an addenda, the Wright brothers had added the following statement, 'In view of the fact that all of the flights which have been mentioned were made in private, it is proper that the names of persons who witnessed one or more of them should be given.' And they had identified 17 individuals by name.

**Table 1.** Nominees for the 1909 Nobel Prize in physics

Nominee	Nationality of nominee	Number of nominations received
Edouard Branly	France	1
Carl Ferdinand Braun*	Germany	1
Julius Elster	Germany	1
Henri Farman	France	8
Hans Geitel	Germany	1
George Ellery Hale	USA	7
Oliver Heaviside	Britain	1
Heike Kamerlingh Onnes	Netherlands	6
Freidrich Kohlrausch	Germany	3
Guglielmo Marconi*	Britain	2
Max Planck	Germany	9
Henri Poincaré	France	3
Valdemar Poulsen	Denmark	1
John Henry Poynting	Britain	1
Augusto Righi	Italy	1
Heinrich Rubens	Germany	2
Gabriel Voisin	France	8
Johannes D. van der Waals	Netherlands	2
Wilhelm Wien	Germany	2
Orville Wright	USA	8
Wilbur Wright	USA	8

\*Indicates the two chosen winners.

**Table 2.** Nominees for the 1913 Nobel Prize in physics

Nominee	Nationality of nominee	Number of nominations received
Emile Amagat	France	6
Rene Benoit	France	1
Hugh Longbourne Callendar	Britain	1
Henri Deslandres	France	1
James Dewar	Britain	2
Albert Einstein	Germany	3
Hermann Frahm	Germany	1
Eugen Goldstein	Germany	1
Charles Edouard Guillaume	France	1
Robert Hadfield	Britain	2
George Ellery Hale	USA	1
Julius von Hann	Austria	1
Heike Kamerlingh Onnes*	Netherlands	7
Otto Lehmann	Germany	1
Carl von Linde	Germany	1
Hendrick Antoon Lorentz	Netherlands	1
Walther Nernst	Germany	1
Karol Olszewski	Poland	4
Jean Perrin	France	1
Max Planck	Germany	9
Augusto Righi	Italy	5
Adolf Slaby	Germany	1
Theodor Svedberg	Sweden	1
Orville Wright	USA	1
Wilbur Wright	USA	1
F. von Zeppelin	Germany	1

\*Indicates the chosen winner.

(3) Our recent experiments in North Carolina (*Aeronautics*, June 1908, pp. 4–6); in this report, the Wright brothers provided the schedule of flights conducted during May 1908. They indicated that ‘a passenger was taken on board’ on 14 May 1908. It was Charles W. Furnas, the mechanic who served the Wrights. He became the first passenger in aviation.

(4) Our aeroplane tests at Kitty Hawk (*Scientific American*, 13 June 1908, p. 428); the Wright brothers ended this report recording their improved flight performance with the sentence, ‘The machine showed a speed of nearly 41 miles an hour with two men on board, and a little over 44 miles with one man.’

(5) The Wright Brothers’ Aeroplane (*Century* magazine, September 1908, pp. 641–650); this was the only lengthy popular account presented by the Wright brothers, in which they had reviewed the past efforts by their ‘rival’ aviators. In the concluding paragraph, they had poignantly described their funding status as follows: ‘Our experiments have been conducted entirely at our own expense. In the beginning, we had no thought of recovering what we were expending,

which is not great, and was limited to what we could afford for recreation. Later, when a successful flight had been made with a motor, we gave up the business in which we were engaged, to devote our entire time and capital to the development of a machine for practical uses.’

To these five reports, the American patent (number 821, 393) which was first filed by the Wright brothers on 23 March 1903 (before their 17 December 1903 first flight demonstration) and underwent numerous revisions before being accepted and granted on 22 May 1906, should also deserve recognition<sup>13,14</sup>. This patent dealt with the wing-warping system of lateral control. Subsequently, the Wright brothers filed two additional ‘flying-machine’ patents<sup>13,18</sup> in February 1908. By the time the patents were granted on 14 October 1913 and 29 December 1914, Wilbur Wright had died, and their worth in influencing the selection for the 1913 Nobel Prize for physics had lapsed.

I conclude this note, with 10 lines from Robert Frost’s long poem, ‘Kitty Hawk’,  
 ‘God of the machine,  
 Peregrine machine,

Some still think is Satan,  
 Unto you the thanks  
 For this token flight,  
 Thanks to you and thanks  
 To the brothers Wright  
 Once considered cranks  
 Like Darius Green  
 In their home town, Dayton.<sup>19</sup>

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