

100 Years of Amateur Radio Licensing

August 17, 2012 marks the 100th anniversary of President William Howard Taft signing into law the *Radio Act of 1912* — the first regulations affecting radio amateurs in the US.

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If you're like most radio amateurs, getting your "ticket" was a seminal point in your life. How did you feel when you passed your test, perhaps taken under the watchful eye of an FCC examiner? Or when you opened that envelope from the FCC — or checked the ULS online — and learned your new call sign? That excitement you felt is the same way amateurs felt 100 years ago.

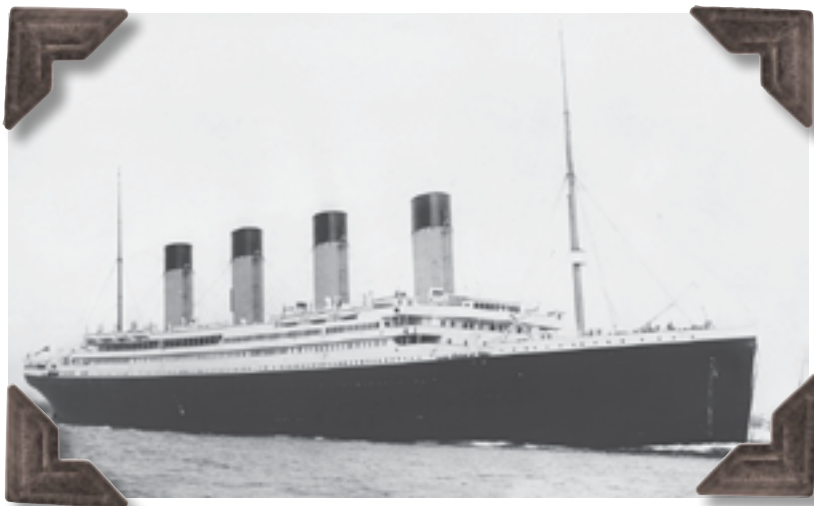
Yes, you are not so different from the wireless experimenters who roamed the airwaves in the early 20th century. There is one big difference, however: You have a license to operate, as well as a call sign issued by the federal government and rules that must be followed. Prior to December 1912 — when the *Radio Act of 1912* went into effect — there were no Amateur Radio licenses; in fact, there were few governmental regulations of any kind for wireless operators. Anyone who wanted to could put a radio transmitter on the air. They didn't have to take a test. They could use any power, assign themselves a call sign of their own choosing, pick any wavelength at will and operate either as an amateur or commercial station when and as they pleased. Power was only limited by one's pocketbook, and some pocketbooks did not stop short of the 5 kW mark.¹

As of 1911, there were only about 600 wireless stations in the US, and of those 600, about 150 were commercial or US Navy stations.² And of the 450 or so amateur stations, many operated at a higher power with bigger antennas than those used by the Navy or commercial stations. Before 1912, it was the radio amateur who dominated the airwaves.

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With no rules in place, the airwaves were a lawless wasteland. Between 1902 and 1912, a total of 28 bills dealing with radio were introduced in Congress.³ Only one of these,

¹Notes appear on page 69.



Just days before the sinking of the RMS *Titanic* the US ratified the Berlin International Wireless Convention of 1906 that spelled out international radio regulations. These international rules laid the groundwork for the *Radio Act of 1912*, the first rules governing Amateur Radio. [F.G.O. Stuart photo]

The Wireless Ship Act of 1910, made it mandatory for certain ocean steamers to have radio communications equipment on board — and operators trained to use it. But neither this act, nor its 1912 amendments (not to be confused with the *Radio Act of 1912*) had any bearing on Amateur Radio.

The Sinking of the RMS *Titanic* and the *Radio Act of 1912*

When the *Titanic* went down to its watery grave in April 1912, it was largely thanks to the two Marconi Company wireless operators — Jack Phillips and Harold Bride — that 712 people survived. Both operators were able to broadcast messages to other ships in the vicinity that the *Titanic* was in danger. Having wireless on board a ship was not the safety measure that it seems today.

At the time, it was in place so passengers could check their stock portfolio or send private messages — and this service was available for a fee. With

the advent of wireless, the White Star Line, under whose flag the *Titanic* sailed, did not feel that a full complement of lifeboats was needed on its ships,⁴ believing that wireless could be used to send distress calls and other ships would respond in time.

On both sides of the Atlantic, hearings were held to determine ways to ensure that such a tragedy would never happen again. The day after the *Titanic* survivors arrived in New York City, William Alden Smith, a Republican senator from Michigan, convened the US hearings. Senators and spectators heard dramatic testimony from the surviving passengers and crew. On May 28, Smith's subcommittee issued a report that led to the *Radio Act of 1912*. Less than eight months after the hearings, President Taft signed the act into law.

The Berlin Convention of 1906⁵ set into place international radio regulations, including the use of SOS as an international distress call, and required all land and ship radio stations to be staffed 24 hours a day, seven days a week. Ironically, it wasn't until April 3, 1912 that the US ratified these regulations — just before the *Titanic* disaster and just in time to incorporate them into what would become the *Radio Act of 1912*. But the US version had one major difference from the international version: Regulation 15, which specified that private (amateur) stations could not use wavelengths in excess of 200 meters (1.5 MHz), except by special permission. Specifically,

No private or commercial station not engaged in the transaction of bona fide

commercial business by radio communication or in experimentation in connection with the development and manufacture of radio apparatus for commercial purposes shall use a transmitting wave length exceeding two hundred meters, or a transformer input exceeding one kilowatt, except by special authority of the Secretary of Commerce contained in the license of that station: Provided, That the owner or operator of a station of the character mentioned in this regulation shall not be liable for a violation of the requirements of the third or fourth regulations to the penalties of one hundred dollars or twenty-five dollars, respectively, provided in this section unless the person maintaining or operating such station shall have been notified in writing that the said transmitter has been found, upon tests conducted by the Government, to be so adjusted as to violate the said third and fourth regulations, and opportunity has been given to said owner or operator to adjust said transmitter in conformity with said regulations.⁶

A New Era for Radio Amateurs

With the *Radio Act of 1912* now the law of the land, Amateur Radio operators were put in their place, so to speak. The US Navy — still disconcerted by being unable to use Marconi equipment, as well as its disapproval of radio amateurs and their high-power equipment, no power limits and big antennas — effectively petitioned Congress to limit Amateur Radio privileges. Prior to 1912, amateurs were all over the band map, with the “little pistols” only able to transmit on 250 or 300 meters, while the “big guns” could range as high as 1000 meters.⁷ Not anymore. Among other things, amateurs

were limited to those frequencies “200 meters and down.” In those days, it was the prevailing thought that radio waves increased in effectiveness directly in ratio to their length. This meant that it was believed that 700 meters was more powerful than 160 meters; wave-lengths shorter than 250 meters were thought to be essentially worthless for anything but the most limited work. Lawmakers — and the US Navy — thought that by giving radio amateurs such a “worthless” portion of the spectrum, amateurs would become frustrated and would lose interest in operating.

Put yourself in the shoes of the day: Amateurs, who had roamed the bands at will, would now be limited to what was considered to be a puny — and worthless — piece of radio spectrum. Such a brilliant theory on the part of the lawmakers, but by 1917, just five years after the *Radio Act of 1912* went into effect, there were more than 6000 amateurs on the air. Today, with more than 700,000 radio amateurs, it’s clear that that theory back in 1912 didn’t work out exactly as planned.

Not only were radio amateurs limited to those frequencies below 200 meters, traffic



William Alden Smith, a Republican senator from Michigan, chaired the hearings after the sinking of the RMS *Titanic* in April 1912. The report from the hearing later helped to form the *Radio Act of 1912*. [photo courtesy of the Library of Congress]

from commercial and US Navy stations now had priority over the amateurs. Those operators who had grown accustomed to using high power were now limited to a “paltry” 1 kilowatt. Amateurs were to be assigned permanent call signs, and they would have to use them when transmitting.

In the beginning, Amateur Radio was governed by the US Department of Commerce and Labor (in March 1913, it was split into the Department of Commerce and the Department of Labor),

then by the Federal Radio Commission, and finally, in 1934, by the Federal Communications Commission.

The federal government’s licensing of Amateur Radio experimenters and operators has evolved considerably over the past 100 years. Even so, many things are still the same. As radio amateurs, we still use call signs, we still have power limits and we still have to pass a test to become an Amateur Radio operator. But after 100 years, amateurs will no longer be limited to “200 meters and down” on a non-experimental basis: At the 2012 World Radiocommunication Conference in Geneva, Switzerland, WRC-12 delegates approved a 7-kilohertz-wide secondary allocation to the Amateur Radio Service between 472-479 kHz. This new 630 meter allocation will take effect when it is entered into the ITU’s Radio Regulations and the US rules are revised.⁸



White Star Line Chairman J. Bruce Ismay — shown here testifying before Smith’s subcommittee about the disaster — was one of the *Titanic*’s 712 survivors. More than 80 witnesses testified before the Senate subcommittee over the 18 day inquiry. A complete transcription from all the witnesses in both the American and British inquiries is available online at www.titanicinquiry.org. [Sketch by Louis F. Grant from *The Graphic*]

Notes

¹ *The 1932 Radio Amateur’s Handbook* (published by ARRL), p 2.

² *The 1932 Radio Amateur’s Handbook* (published by ARRL), p 2.

³ C. DeSoto, *200 Meters and Down*, p 28, ISBN 978-0-87259-001-4, see www.arrrl.org/shop/200-Meters-and-Down.

⁴ See [#22875](http://www.titanicinquiry.org/BOTInq/BOTInq23Chalmers01.php).

⁵ See earlyradiohistory.us/1906conv.htm.

⁶ See earlyradiohistory.us/1914reg.htm#RA4-15.

⁷ *The 1932 Radio Amateur’s Handbook* (published by ARRL), p 2.

⁸ See www.arrrl.org/news/amateur-radio-gets-secondary-mf-allocation-at-wrc-12.

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