Agnes Weston was born on 28th March 1840 as the daughter of a barrister. In 1845, her father retired and the family moved to Bath. She was educated at private schools, including preparation for confirmation from a priest whose leaning was towards Christian evangelism and whose teaching left a strong influence on the young Agnes.

After leaving school, she began philanthropic work that suited a young lady of her station and also began to speak at temperance meetings. She also learnt to write tracts for the promotion of the temperance movement. She opened a coffee bar for the soldiers of the 2nd Somerset Militia brigade. When they were posted away, she kept in touch with some of the soldiers by writing to them. In 1868, one of her letters was shown to a troopship steward who remarked that it would be nice to receive such a letter. Agnes was told about the steward and she also began writing to him and others. This started off her career in sailor welfare.

In 1873, sailors who corresponded with Agnes were paid off and she went to visit them at Devonport, Plymouth. She met Sophia Wintz and they became good friends and later fundraising partners. Agnes joined the Royal Naval Temperance Society and was allowed to visit sailors on warships and talk to the crew to promote temperance. Later it was suggested that she open a temperance house near to the dockyard gates. After discussing it with Sophia, they decided to undertake the project. Through meetings around the country, they were able to raise enough funds to buy a house outside the dockyard at Devonport and open it up as a hostel for sailors. It was opened in May 1876 as the first "Sailor's Rest". It was immediately successful since it offered place to eat and drink as well as beds for the night if required. Although intended as a temperance house for the promotion of the movement, it was not confined to those of similar views and all sailors were welcome to make use of the facilities. Lectures were arranged as well as religious services and there was the chance to sign the "pledge" to refrain from drinking alcohol.

The success of the Devonport Sailor's Rest led to a similar project being opened in Portsmouth in 1881, to provide baths, lodgings and recreational activities and facilities. Agnes and Sophia felt that these facilities would help to combat alcoholism in the sailors and keep them from causing mischief on the streets. They also opened Rests at Portland and Sheerness, but found the prospect of organising four establishments too much. The Rests were intended to be self-funding once they had been set up through public subscription. Soon they were able to house 900 men at Devonport and 700 at Portsmouth. To add to the satisfaction gained from the success of the Rests, several pubs had been closed and demolished due to lack of custom.

Agnes became known as "Mother" Weston as she was constantly concerned and interested in her sailor's welfare, while being forthright on her views on their drinking habits. She was also known by the name "Aggie". The work of Agnes and Sophia was becoming more publicly known and in 1895, Queen Victoria endowed a cabin to be used as a Sailor's Rest in Devonport and allowed the use of the words “Royal Sailor's Rest” to be given to the whole institution.
Agnes did not neglect the sailors at sea. Where she had previously written letters to individual sailors away from home, she now printed a monthly letter to sailors for distribution among the ship. This rose to a circulation of 60,000 by 1918. She also published a journal *Ashore and Afloat* to encourage Christian beliefs, behaviour and temperance amongst sailors.

Agnes was created a Dame of the British Empire in 1918. However, she died shortly after receiving this award on 23 October 1918 at Devonport. She was buried with full naval honours. In 1940, a frigate was named after Weston-Super-Mare and this became known in the fleet as "Aggie-on-Horseback".

Her Sailor’s Rests continued to operate up until the turn of the twenty-first century, when a fall in custom has led them to be closed.