

**Volume 3**

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**George Westinghouse - II**

**Lead: Aware of repeated and often deadly railroad accidents, George Westinghouse developed the air brake.**

**Intro.: *A Moment in Time* with Dan Roberts.**

**Content: At first Westinghouse tried to harness the steam generated by the locomotive, but found that by the time steam reached the rear of the train it had begun to condensing thus losing its power to force the brakes. His solution came while reading a magazine article describing the construction of the huge railroad**

**tunnel through Mont Cenis in the Italian Alps. Instead of generating steam deep in the mountain for drilling which would eat up precious oxygen, engineers compressed air on the outside and pumped it to the tunnel face. Westinghouse applied the same principle to stopping trains, some of which were dozens of cars in length.**

**Even after he had built a working model, few paid him heed. The experts said the patented Westinghouse air brake was worthless. He plowed on. Westinghouse and his partners finally convinced the tiny Panhandle Railroad of Pennsylvania to give his brake a try. In April, 1869 the system was put to a severe test. As it emerged from the Grant's Hill tunnel in Pittsburgh, the**

**engineer of the specially equipped train spotted a horse and wagon on the track ahead. The startled horse bolted and the driver was thrown, stunned onto the track. The engineer applied the Westinghouse brakes and the train slowed and stopped within a few feet of the horrified driver. Soon Westinghouse had partners, manufacturing capital and orders began pouring in.**

**One of the ongoing problems was that the whole system shut down if there was a leak or break in the line. He solved that problem by installing an air tank on each car. When the engineer applied the brake he actually let air out of the system triggering the emergency release of air from these**

**individual car reservoirs which then tightened the brakes and stopped the train. Westinghouse's brake system revolutionized railroading allowing trains to carry more cargo and passengers at even greater speeds.**

**At the University of Richmond, this is Dan Roberts.**

**Resources**

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