

Respiratory Protective Equipment Development in the Dominions – History from the McPherson Smoke Hood Onward

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The use of chlorine in April 1915 at Ypres during World War I led to immediate development of improvised and rudimentary respiratory protective equipment, such as earth-filled bottles and moistened cloth pads. The first fully protective headpiece was developed by a captain in the Newfoundland Regiment, Dr. Cluny McPherson. This was an impregnated cloth hood with a mica and later celluloid eye-piece. The cloth was impregnated with a solution of sodium thiosulphate, glycerine and sodium carbonate and provided protection against chlorine. This “smoke helmet” was tested by its inventor and manufactured in quantity for the battlefield. Subsequent improvements were the addition of round eyepieces, an outlet valve and modification of the treatment solution to protect against phosgene. The hood design saved thousands of lives and was in service for a year until the advent of canister-type respirators in 1916.

Today, Canada remains at the forefront of military and first responder respiratory protection development - the latest Canadian military respirator offers high protection factors and a filter with broad capability; Canadian facilities such as the Counter-Terrorism Training Centre allow equipment users to train with live agents, and the CBRN Research Technology Initiative is supporting and developing a wide range of technologies including user guidance and standards development for first responder products. Despite many advances since 1915, many of the challenges remain the same. This presentation will describe the progression of respiratory protective equipment within the Dominions and highlight directions for the future.