

REPORT OF INVESTIGATIONS

UNITED STATES DEPARTMENT OF THE INTERIOR - BUREAU OF MINES

METHODS OF ROCK-DUSTING AMERICAN COAL MINES^{1/}

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INTRODUCTION

Investigations by the Bureau of Mines and by mining-research departments of European countries have established definitely the value of rock-dusting to prevent or limit the propagation of coal-mine explosions. Its effectiveness in this connection has been demonstrated not only by research but by actual coal-mine explosions in which hundreds of lives have been saved because of its presence.

In a general way this paper gives pertinent facts concerning rock-dusting practices in the United States. Information has been obtained from many reliable sources, and various coal-mining companies have furnished data on cost and other details.

HISTORY OF ROCK-DUSTING IN THE UNITED STATES

The use of rock dust to prevent or limit coal-dust explosions in bituminous-coal mines was first suggested in England in 1891 by Sir William Garforth, who had noted that the Altofts mine explosion in 1887 had not penetrated any of the naturally shale-dusted passages. Rock-dusting has been advocated by the Bureau of Mines since 1910, but it was not until 1923 and 1924 that the mine operators in the United States considered it seriously, although a few mines had begun to use it experimentally as early as 1911 and 1913. The first mine in the United States to experiment with rock dust was the Delagua mine of the Victor-American Fuel Co., Delagua, Colo., which in 1911 applied rock dust on the main trolley haulage entries by a locally developed machine consisting of an electrically driven blower and a funnel-shaped hopper mounted on a mine truck.

During 1915, the Pittsburgh Coal Co. began rock-dusting experiments in two of its mines by applying limestone dust to the ribs and roof by hand. Following an explosion in one of its mines in Illinois in 1917, the Old Ben Coal Corporation began rock-dusting its mines.

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