conditions are found to exist in other mines of this company, mining practices that could induce outbursts should be eliminated.

- 2. If the pillar line on which this disaster occurred is to be reestablished, it should be straightened out before retreating and all pillars should be taken "open-ended" (a thin "shell" fender may be left next the goaf); no slabbing should be done in small pillars to reach the face area with roadways; under no circumstances, should pillars be split by driving toward the goaf or other pressure areas; and rows of breaker posts should be set at points where roof breaks are desirable.
- 3. To insure good roof breaks, the pillar line should be retreated in a straight and orderly manner, and no pillar remnants should be left in the goaf.
- 4. To familiarize themselves with the conditions that have resulted in bumps in neighboring fields, the officials of the mine should visit these mines and discuss the problem with the mine officials.
- 5. Whenever signs of "bumps" are suspected, the men should be withdrawn immediately from the disturbed region.

## ACKNOWLEDGEMENT

The writers wish to acknowledge the courtesies extended, and the assistance given, by the officials of the Clinchfield Coal Corporation, particularly Mr. A. R. Matthews, president; Mr. R. S. Adams, production manager; Messrs. Hughes and Parnell, engineering department; Mr. Luther Allen, assistant superintendent; and Mr. Oscar Burden, mine foreman.

The cooperation of Messrs. Kelly, St. Clair, and Mullins of the Division of Mines, Virginia Department of Labor and Industry is also gratefully acknowledged.

Respectfully submitted,

(Signed)
Edward Thomas,
Mining Engineer.

(Signed)
William R. Park
Ccal-Mine Inspector.

## APPENDIX I

## LIST OF DECEASED MEN

Name	Age	Occupation
Uris Artrip	<u>Age</u> 42	Timberman
James Darrell Rasnick	20	Slate Picker
Arnold Vicars	32	Machine Helper
Troy J. Phillips	25	Trackman
Harold Parks	23	Joy Operator
Okley Creger	39	Joy Helper