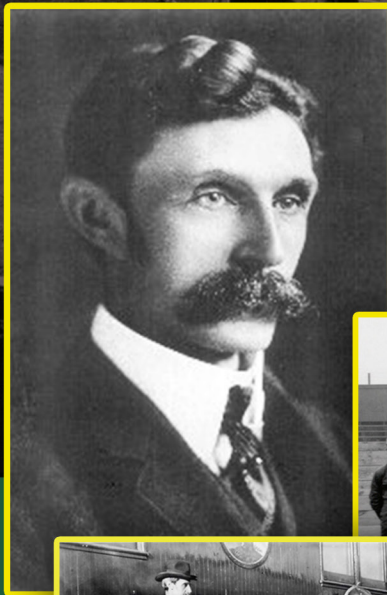




The Joseph A. Holmes Safety Association

June 2016



100th Anniversary Commemorative Edition

Celebrating 100 Years of people working together to achieve a
safer and healthier workplace for the Nation's miners

Contents

100th Anniversary comments from Jeffery Kravitz	3
Safety First: The Life and Legacy of Joseph A. Holmes	4
Modern Mine Rescue Technology	9
Development of Risk, Preparedness and Readiness Models	10
Holmes Safety Bulletin - Spreading the Safety Message	14
Joseph A. Holmes Safety Association Awards	16
Joseph A. Holmes 2017 Scholarship Information.....	25

The Joseph A. Holmes Safety Association (JAHSA) Bulletin contains safety articles on a variety of subjects: fatal accident abstracts, studies, posters, and other health and safety-related topics. This information is free of charge and is designed to assist in presentations to a group of mine workers during the on-the-job safety meetings.

You are free to use materials in this Bulletin except for materials bearing a copyright attribution without specific permission, as long as the use is not deceptive and you cite “Joseph A. Holmes Association Bulletin” as the source. Use of any material identified as copyrighted must be approved in writing, except as otherwise provided under applicable copyright law. Please direct a request to the identified copyright holder.

The views and conclusions expressed in a Bulletin article are those of the author. For the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health (NIOSH), only the material identified as reproduced from an official MSHA or NIOSH document in its entirety represents an official MSHA or NIOSH policy.

Cover photo courtesy of MSHA/National Mine Academy/Graphics



100th Anniversary of the Joseph A. Holmes Safety Association

Joseph Austin Holmes worked tirelessly to help the nation's miners, and was appointed as the first director of the U.S. Bureau of Mines. He adopted and made famous the slogan "Safety First," and lived by that rule throughout his life. Unfortunately, his good work was prematurely cut short when his health deteriorated, and in July 1915, he died of tuberculosis at the relatively young age of 56 years.

The Joseph A. Holmes Safety Association was founded in 1916 by 24 leading national organizations to promote health and safety in the mining industry, and to perpetuate the beliefs and ideals of Dr. Holmes. In 1919, the first awards (gold metals) were given to miners who demonstrated acts of heroism. At its 1921 annual meeting, the Association adopted a resolution to create local safety chapters. The chapters were expected to hold monthly safety meetings and to help with first aid training, accident prevention, and improvement of health conditions in the mines.

In March 1926, the Association began to organize and coordinate efforts of the local chapters throughout the United States, and named the new national organization the Holmes Safety Association. The new association consisted of a National Council, State Councils, District Councils, and Local Chapters. In 1927, the awards program was expanded to include the recognition of outstanding safety achievements. Mining companies were interested in obtaining recognition for their safety accomplishments, and actively participated at local chapter meetings and activities.

The two organizations merged in 1999 to form the unified Joseph A. Holmes Safety Association. While the initial focus of this organization was on the coal industry, it was later expanded to all mining operations, includ-

ing the mineral industry and surface mines. Scholarship awards were added to aid the education of those students who wished to study in the areas of mine health and safety. In 2013, the Holmes Mine Rescue Association was created as part of the Joseph A. Holmes Safety Association, bringing the Association back to its original roots.

The Holmes Mine Rescue Association provides the opportunity:

- For a sustainable and recognizable organizational structure for mine rescue to improve mine rescue efforts;
- For national leadership for mine emergency response;
- To help develop and provide best practices, procedures, and training;
- To help disseminate guidelines, training, or tools to the mining public; and
- For a vehicle to help support mine rescue training and national coal or metal and non-metal training contests.

Looking toward the future, it is up to us to keep challenging ourselves to further advance ways to improve the health and safety of miners, and to find ways to improve technology, training, and guidance for our mine rescue teams across all mining sectors.

This year marks the 100-year anniversary of our Association. We continue to carry on the important work of the person for whom the organization was named – the engineer, geologist, conservationist, instructor, administrator, and mine safety visionary – Joseph A. Holmes.

Jeffery H. Kravitz, Ph.D.

President, Joseph A. Holmes Safety Association

Safety First: The Life and Legacy of Joseph A. Holmes

DID YOU KNOW THAT

Between 1900 and 1910, 24,376 miners died in accidents in the U.S.¹

Bloody December

Mine explosions attracted a great amount of public attention and concern because they were so horrific. Explosions, in many cases, occurred because of poor work practices, open lights, electric arcs or failure to understand the dangers posed by new technologies.

In December 1907, fatal explosions reached their peak; 472 miners perished in a series of deadly mine explosions.

On December 1, a gas and dust explosion killed the 34 men working inside the Naomi Mine at Fayette City, Pennsylvania. According to the accident investigation, the gas was "...not detected before anyone was allowed to enter the mine." It had been an accepted practice at Naomi to fireboss only the working places before miners were allowed to enter. A ventilation door was left open which allowed gas to accumulate and an open light or electric arc triggered the ignition.

DID YOU KNOW THAT

The 362 men who died in the explosion at Monongah 5 and 7 are the largest number of people killed in a single mine disaster in the U.S.

Monongah 6 and 7, located at Monongah, West Virginia, were approximately 1¼ miles

apart, but connected so that either mine could be ventilated from the other opening if necessary. The mine was firebossed but all the workers used open lights.

At about midnight on December 6, a cut of loaded cars reached the top of the No. 6 mine when a runaway occurred. The cars rolled back down the slope and wrecked, raising a pile of coal dust which was ignited either by an open light or by an electric arc from wires pulled down by the cars.

A tremendous explosion ripped through the mine at 10:28 a.m. killing nearly all of the 367 men in the mine. Explosive forces destroyed the ventilation system, smashed equipment, and caused extensive roof falls. Four miners managed to escape from the mine and one man was rescued.

Fifty-seven more miners perished in an explosion at the Yolande Mine, Yolande, Alabama, on December 16. Thirty miners did escape after the explosion. The force of the blast wrecked the mine's ventilation system; those not killed outright by the explosion suffocated from blackdamp (a mixture of nitrogen and carbon dioxide).

Investigators found that an open light had ignited accumulated gas and that the forces of the explosion had been propagated by coal dust. They also discovered that the coal dust had not been wetted down during the workday and the fireboss had quit, which meant that the mine had not been firebossed before work began.

Darr Mine, at Jacobs Creek, Pennsylvania, had never been thought of as a "...very dangerous mine as it generated only a small percentage of gas and was worked with open lights." The mine with "...an awful rumbling followed by a loud report and concussion" felt miles away blew up on December 19. The explosion blew out all of the mine's stoppings,



SAFETY FIRST - Joseph A. Holmes is credited with the slogan "Safety First" in an effort to improve mine safety conditions and awareness of the dangers in coal mines.

and only one man of the 240 miners inside escaped because he had been "on his way to the engine room for oil." The accident report stated that the explosion could have been caused by the "projection of flame into a gaseous and dusty atmosphere by an open light or a blown-out shot."²

Early Federal Mine Safety Legislation

Congress had looked at mining problems as early as 1865 when a bill was introduced (at the request of the mining industry) to create an agency to help develop improved mining and metallurgical methods. Other bills followed in 1867, 1892, and 1901, but

they did not really deal with health and safety issues.

The violence and loss of life associated with accidents such as Naomi, Monongah, Yolande, and Darr along with other mishaps, especially because they occurred in so-called "safe" operations, focused national attention on coal mine safety and produced an outcry for legislation to address safety concerns in the nation's coal mines.

"Congress, in May 1908, authorized an investigation as to the causes of mine explosions with a view toward increasing safety in mining."³

An experiment station was set up at the old Pittsburgh arsenal in 1908. Tests on different mining explosives conducted at the station led to a list of permissible explosives a year later. Permissible explosives were defined

as “...those approved for use in dusty and gaseous coal mines under certain prescribed conditions....”⁴

Other studies examined different causes of mine explosions including coal dust, mine gases, electrical equipment, and miners’ lamps. In addition, experiment station personnel tested a variety of mine rescue gear.

A network of mine rescue stations and mine rescue cars (specially-built railroad cars) was established in 1908. These cars were used as classrooms to give on-site training to miners on first aid and mine rescue.⁵

By 1909 Congress faced irresistible pressure from the mining community and the general public to deal with mine safety issues. Congressman George F. Huff (R-Pennsylvania), Chairman of the House Committee on Mines and Mining, drafted the bill for establishing a Bureau of Mines. The House held hearings and many testified to support the need for a Federal mining agency.

Public Law 179, establishing the Bureau of Mines, took effect on May 16, 1910.

Joseph A. Holmes: His Life and Legacy

Joseph A. Holmes, first director of the Bureau of Mines, came to mine health and safety via a roundabout route.⁶

He was born on January 23, 1859, in Laurens, South Carolina. One of 12 children, Holmes’ parents placed a great value on education and, after preparing at Laurens Academy, Holmes graduated from Cornell University, Ithaca, New York, in 1881 with a Bachelor’s degree in agriculture.

The 22-year-old received an appointment (immediately after graduation) as professor of geology and natural history at the University of North Carolina, Chapel Hill. He remained at Chapel Hill until 1903, serving as a department head from 1881 until 1891.

Holmes had a great practical curiosity about the world around him and was a tireless worker, an energetic and talented administrator, organizer, and advocate for careful study, use, and stewardship of the Old North State’s resources. These abilities were recognized in 1891 when he was appointed as North Carolina’s first State Geologist. He had overall charge of the newly-created North Carolina Geological Survey.

Holmes also addressed other issues including the need for better highways and transportation both in North Carolina and in the Appalachian Region. These activities were part of the Good Roads Movement. He was a tireless worker who regularly put in 17-hour days.

DID YOU KNOW THAT

The Good Roads Movement was a national and state-level association advocating improvement of roads in rural areas. Dr. Holmes was instrumental in founding the North Carolina Good Roads Association in 1902.

The centennial of the Louisiana Purchase was in 1903 and an Exposition was set to commemorate the occasion. This celebration is better known today as the St. Louis World’s Fair. The Fair was to open in 1903 but was postponed until 1904 to finish planning and construction. The exposition was promoted as the largest World’s Fair.

Holmes was involved with the Exposition as director of the department of mines and metallurgy at the fair. He won international recognition for this along with appointment to a congressional committee charged to investigate better ways to use domestically produced fuels and materials. His work with the committee led to his resignation as North Carolina State Geologist in 1905 which led to a new job as chief of the U.S. Geological Survey’s technological branch.

He advocated for efficient use of natural resources including forests and water. He played a role in formation and passage of the Weeks Act in 1911. This legislation facilitated the creation of national forests, especially in the eastern U.S.

His attention was turning to mine safety even as he was serving as head of the U.S. Geological Survey's technological branch. He became the Bureau of Mines' first director, after some political infighting, in 1910.

The Bureau's mission was to...

"...make diligent investigation of the methods of mining, especially in relation to the safety of miners, and the appliances best adapted to prevent accidents, the possible improvement of conditions under which mining operations are carried on, the treatment of ores and other mineral substances, the use of explosives and electricity, the prevention of accidents, and other inquiries and technological investigations, pertinent to said industries..."⁷

The Bureau of Mines' two major divisions; one devoted to researching mine explosions, and the other to analyzing and testing mineral fuels, were located in Washington, DC.

Holmes understood the need to address systematically and rapidly a variety of safety issues when he took control of the Bureau.

The human cost of accidents indicated the degree of general knowledge about mine safety in the United States.

Most mines used open oil or acetylene lamps for illumination, and, except in mines known to be gassy, blasted with black powder. There were no permissible explosives and no certified permissible equipment of any type in use at American coal mines. This situation, as mentioned earlier, began to be addressed before the Bureau was established.

It was believed in the United States

that coal dust in suspension could not be ignited in the absence of methane in a mine atmosphere to produce disastrous explosions under "typical" mining conditions. In addition, little was known about the properties of combustible gases found in mines both before and after explosions.

The Bureau intensified work on explosions and built an experimental mine at Bruceton, Pennsylvania. The mine had "...two drifts or entries...with branch entries and rooms....This mine was equipped with suitable apparatus for recording the speed and the violence of explosions." Bureau engineers used the mine to "...determine the explosibility of different coal dusts under different conditions..." and to study ways to control or prevent explosions.⁸

Electricity was a relatively new technology in mining. Holmes set up a series of studies to look at practical ways to reduce accidents caused by electric shock, burns, arcs, and sparks.⁹

Many mines had inadequate ventilation and rock dusting was not practiced. There was, in fact, little knowledge available about mine ventilation and many operators ventilated their mines through trial-and-error; often with tragic results. The Bureau's staff spent a lot of time examining new technologies for preventing the propagation of coal dust in mine explosions. Rock dust appeared to be promising in this area.¹⁰

The Bureau expanded the scope of their previous activities in explosion prevention to metal and nonmetal mining by conducting studies to assess the effect of powder on miners. They also looked at health-related problems such as silica in mine air. These studies concentrated on the characteristics of mine dust and its control in the mining environment. As part of this effort, Bureau personnel developed an "apparatus for determining rock dust" (known today as a dust sampler).

Also under Holmes' direction, the Bureau developed and provided education and

training to miners in subjects such as mine rescue, first aid, and firefighting.

In addition, Bureau personnel worked to share knowledge of safety and health regulations among the states. Their engineers visited explosion sites and fire locations to work with state or mine officials to investigate accidents.

Holmes worked tirelessly to share knowledge and information with the mining community.

On October 30, 1911, the Bureau hosted a mine safety demonstration and international safety conference at Pittsburgh, Pennsylvania. The event, held at Forbes Field, included both exhibits and live exercises showing the Bureau's work in a wide spectrum of health and safety subjects including mine rescue, first aid, and coal dust explosions. Records show that approximately 15,000 people, including President William Howard Taft, attended the safety demonstration.



The first national mine safety demonstration was held at Forbes Field, in Pittsburgh, on October 30, 1911. Approximately 15,000 persons attended the demonstration, including officials of both National and State governments. Seated above are President William H. Taft and Dr. Joseph A. Holmes.

A week-long international conference of representatives from different mining experiment stations was held at Pittsburgh from September 14 to 21, 1912. Participants explored ways to conduct mine health and safety experiments, and how to share information about mine safety issues.

First aid concerned greatly mine officials, operators, and, of course, miners. The Bureau organized a series of first aid contests; initially at the company level, and eventually at the state level. In time, first aid contests hosting teams from different states were held.

Work on explosions and dust continued and the Bureau began a concerted effort to investigate the causes and prevention of roof falls and roof fall accidents. A new Act passed by Congress and signed by President Taft in 1912 expanded the scope of the Bureau's activities.

The Organic Act of 1913 defined the expanded mission of the Bureau of Mines to "...conduct inquiries...and investigations concerning mining and the preparation, treatment, and utilization of mineral substances with a view toward improving health and increasing safety, efficiency, economic development, and conserving resources through prevention of waste in the mining, quarrying, metallurgical and other mineral industries...." The Bureau was also charged to "investigate explosives..." and to ensure careful use of mineral resources..." belonging to the government. They were also to release reports on a variety of subjects including accident causes and prevention, improving health and safety conditions, "... use of explosives and electricity, safety methods and appliances, and rescue and first aid work...." They were also to study "causes and prevention of mine fires."¹¹

Rescue stations and rescue cars continued to operate at disaster sites and also provided health and safety training to approximately 35,500 miners. Trucks were also added to the Bureau's equipment.¹²

Holmes was a visionary as well as being dedicated to the work of the Bureau of Mines and its research and outreach activities. In 1915, the Bureau's Annual Report afforded a snapshot of what was happening.

The Bureau's work was done "...without prejudice..." and it was a "nonpartisan

continued on Page 22

Modern Mine Rescue Technology and the Rescue Team Member

This year should serve as a reminder of other more recent dark times in our mining history. It has been 40 years since the Scotia Mine disaster took the lives of 26 miners, and only 10 years since the Sago, Aracoma, and Kentucky Darby disasters, where 19 miners died. There are plenty of reminders as to why mine rescue teams are so critical to the mining industry, and the work that Dr. Holmes started over 100 years ago was only the beginning.

Even in today's environment, with mines and mine rescue teams dwindling fast, the law requires all mines to be covered by mine rescue teams. Those teams must be adequately equipped and properly trained to respond when called upon, and mine rescue stations must be within an hour's driving time from any covered mine. Even though we face the same hazards today that were faced in the early 1900s, today's technology allows mine rescue teams to be much safer and more efficient.

Equipment is available to allow direct communications from the teams to the command center without the need to relay information. Electronic mapping is available to display in the command center (in real time) the information that is being logged by the team members. New atmospheric monitoring technology features sensors that can be left at locations in the mine as rescuers move forward, or are forced to retreat, and that will continue to transmit data for extended time frames.

Both government and industry are funding research for robots and drones (that may someday help provide information from deep inside mines) to help during mine emergencies. In addition, there are upgraded command centers designed to manage the new

information streams and quickly relay critical information to others coordinating the mine emergency. Hopefully, we can continue to develop new and safer tools for our teams to utilize, and someday the command center will be able to see in real time what the team members (or robots) are seeing with upgraded infrared camera equipment and improved sensors.

We must continue to embrace new technological advances in order to provide the teams with the best equipment available. However, we should not forget that it is the mine rescue team members that are most important. Those selfless individuals put their lives at risk without question in a moment's notice when called upon to protect life and property in the worst of circumstances. They are truly heroes in every aspect of the meaning. Without them, miners would not have much hope if an accident occurs.

Jim Vicini
President, Holmes Mine Rescue Association



Development of Risk, Preparedness and Readiness Models for the Mining Industry

Introduction

Mining is an inherently risky business. Over the years, major mine disasters have resulted in the deaths and injuries of thousands of miners in the United States (US). These disasters also resulted in innovations in approaches to mine design, operations and the training of miners and mine rescue teams. The US Congress responded to these disasters with new laws designed to create mandatory safety and health standards as a means to eliminate fatal accidents; to reduce the frequency and severity of nonfatal accidents; to minimize health hazards; and to promote improved safety and health conditions in the Nation's mines.

Following a mine emergency preparedness and response Holistic Gap Analysis in 2012, the Mine Safety and Health Administration (MSHA) identified the need for the development of risk and readiness assessment models for MSHA and the mining industry. MSHA's objective was to evolve existing theoretical concepts for risk and readiness assessment into simplified tools that can be applied by the mining Industry for use at operational levels. In 2012, MSHA hired ABS Group to develop self-assessment models to help meet this objective.

In September 2012, MSHA chartered a project to supply the coal mining industry with a pro-active toolset for mine operators to:

- 1) self-assess the risks associated with underground coal mining operations in order to prevent major mine emergencies,
- 2) assess the preparedness of mine operators to respond to an emergency,

- 3) measure the readiness of mine rescue teams and responsible persons to execute emergency plans.

MSHA's objective was to evolve existing theoretical concepts for risk and readiness assessment into simplified tools that can be applied by the coal mining Industry for use at operational levels. MSHA hired ABS Group, a recognized industry leader in safety risk management and a wholly owned subsidiary of the American Bureau of Shipping, to develop the tools in the form of self-assessment models.

The Models

MSHA called for the development of four separate models. The first was a risk assessment model for coal mine operators to use to prevent major mine emergencies. The second was a model to assess the preparedness of coal mines to respond to emergencies. The remaining two models would assess the readiness 1) Mine Rescue Teams and, 2) Responsible Persons. ABS Group assembled a team of consultants with experience developing risk and preparedness assessment tools for other government agencies and industries to support this effort. The specialized team also included the late Dr. Christopher Bise, who had over 40 years of experience in planning, engineering, operation, management, teaching, and research aspects of mining, occupational and environmental health and safety.

Literature Review

ABS Group conducted a thorough literature review of historical mine disasters, common hazards and emergency response best practices to support development of the models. Data was examined from 1900-2006 to understand the loss-control failures that led to the incidents, provide a clear picture of the most common causal factors and help us gain a better understanding of where to focus emergency planning and response improvement efforts, such as through training exercises and stakeholder outreach and engagement. We also surveyed best practices for risk, readiness and preparedness assessment from other countries and industries, specifically Australia, South Africa and the aviation industry.

Industry Workshop

Following development of assumptions and frameworks for each model, we organized a series of workshops with subject matter experts from the mining industry to provide input on critical success factors, validate assessment criteria and assist in building out the models. The Underground Coal Mine Risk and Readiness Assessment Workshop was held at the National Mine Health and Safety Academy in Beaver, West Virginia, on April 3-5, 2013. Industry representatives, including mine operators and emergency responders, reviewed the models and provided feedback on the factors contained in model. Following the workshop, the ABS Group project team incorporated input from the discussions into the risk and readiness models.

MSHA and representatives from the industry groups, including National Mining Association, United Mine Workers of America, the Bituminous Coal Operators Association and the J.A. Holmes Association, also provided input for the final versions of the models, which were completed in August 2013.

The Framework

These models help mine operators make safety-related decisions. Referring to Figure 1, the inputs to the models include risk, preparedness and readiness factors. The models themselves use a series of worksheets and a risk indexing method to enable mine operators to assess their own operations. Outputs, which include mine's risk score, emergency preparedness score and readiness scores, provide immediate information for the mine operator to make decisions related to safety management systems, safety culture, emergency preparedness and the readiness of first responders.

Figure 2 provides an illustration of the output from the assessment models. Simple color coding of the results enable coal mine operators to quickly see their areas of strengths, which are represented by green scores and the areas needing improvement, which are color coded yellow and red. Mine operators can use these results to quickly develop action plans to address areas for improvement thereby reducing risks and improving preparedness and readiness of their operations.

Another important feature of the models is that mine operators can use the results of these assessments for comparison among different mines within their company. Figure 3, for example, illustrates the results of the risk model among six different mines. Operators can use these comparative results to identify strengths and areas for improvement in particular risk factors among all of their mines. Associations, such as the J. A. Holmes Safety Association, could use assessment results among different mining companies to look for trends across the entire industry.

Site Assessments

During 2014 and 2015, several mining com-



RISK, PREPAREDNESS AND READINESS ASSESSMENTS

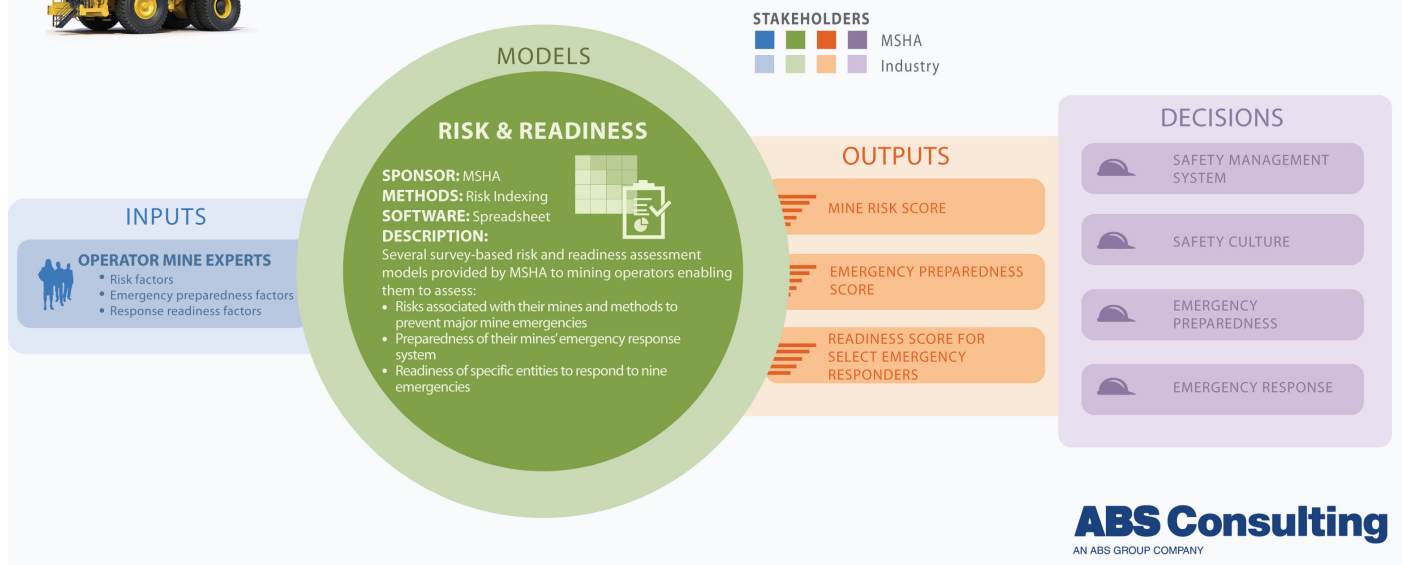


Figure 1

panies volunteered to assist the project by assessing operations at their mine sites using the models. This “field calibration” phase of the project provided valuable insights into the interpretation of the factors included in the models insights into improvements with the self-assessment methodology. ABS Group, in partnership with the Colorado Division of Reclamation Mining & Safety, the Public Leadership Institute and MSHA’s Technical Support Directorate, visited a number of underground coal mines to conduct assessment using the models. Several mining companies with operations in West Virginia and Colorado participated in the site assessments.

The key benefits of the self-assessment approach is for the mining company to re-view their own operations with a critical eye towards identifying problems. Participants also developed action plans to correct the issues found, with the aim to prevent a major mine disaster and to look for gaps in their own preparedness and readiness to respond,

should an event occur. The self-assessment approach enables a mine operator to:

1. Identify problems that are often overlooked
2. Bring together those who know the most about the mine
3. Rely on the judgment and experience of the mine’s management team to develop action plans
4. Provide a track record of continuous improvement
5. Discover industry best practices and common problems
6. Increase confidence of Mine Managers in preparedness
7. Reinforce the belief that you have done “all you can do” to prevent a mine disaster

Feedback from the mining companies that participated in the self-assessments in

continued on Page 23

Overall Summary Assessment					
RISK LEVEL = 1; THE MINE DOES NOT MEET THE STANDARD					
MODEL 1: RISK ASSESSMENT		MODEL 2: EMER PREPAREDNESS		MODEL 3: MINE RESCUE TEAMS	
Risk Criteria	Rating	Risk Criteria	Rating	Risk Criteria	Rating
SECTION A – BASE RISK		SECTION A - PEOPLE		SECTION A – PEOPLE	
A. Design and Planning		A. Local Coordination		A. Competencies	
B. Equip, Maintenance/Reliability		B. Knowledge		B. Training Drills And Exercises	
C. Upkeep of Infrastructure		C. Training and Exercises		C. Leadership/Organization	
D. Documentation/Records		SECTION B – EQUIPMENT		SECTION B – EQUIPMENT	
E. Equipment/Parts/Material		D. Communications		D. Rescue Team Equipment	
F. Hazardous Material		E. Firefighting		E. Mine Infrastructure Equipment	
G. Procedures		F. Facilities		F. Contracted Team Resources	
H. Workplace Conditions		G. Mine Equipment		SECTION C – PROCESS	
I. Training/Personnel Qualifications		H, Rescue Equipment		G. Communications	
J. Supervision		I. Outside Suppliers		H. Emergency Procedures	
K. Communication		SECTION C – PLANNING			
L. Personnel Performance		j. Planning			
SECTION B – ACTIVITY RISK		MODEL 4: RESPONSIBLE PERSONS			
M. Equipment/Infrastructure		SECTION A – PEOPLE		SECTION C – PROCESS	
N. Personnel		A. Competencies		G. Communication	
O. Mining Conditions		B. Training		H. Emergency Procedures	
P. Mining Location		C. Knowledge			
SECTION C – SAFETY CULTURE		SECTION B – EQUIPMENT			
Q. Safety Culture		D. Equipment			
		E. Infrastructure			
		F. Contracted Resources			

Figure 2

Model 1: Base Risk Assessment	Mine 1	Mine 2	Mine 3	Mine 4	Mine 5	Mine 6
A. Design and Planning	GREEN	GREEN	GREEN	YELLOW	GREEN	YELLOW
B. Equipment Maintenance	GREEN	YELLOW	GREEN	YELLOW	YELLOW	RED
C. Upkeep of Infrastructure	GREEN	RED	GREEN	YELLOW	GREEN	GREEN
D. Documentation/Records	GREEN	RED	GREEN	YELLOW	GREEN	YELLOW
E. Material/Parts/Equipment	GREEN	YELLOW	GREEN	RED	GREEN	YELLOW
F. Hazard /Defect ID	GREEN	GREEN	GREEN	YELLOW	YELLOW	YELLOW
G. Procedures	GREEN	RED	GREEN	YELLOW	YELLOW	YELLOW
H. Workplace Conditions (Human Factors)	YELLOW	GREEN	GREEN	YELLOW	GREEN	GREEN
I. Training/Personnel Qualifications	YELLOW	GREEN	GREEN	YELLOW	YELLOW	YELLOW
J. Supervision	GREEN	YELLOW	GREEN	YELLOW	GREEN	YELLOW
K. Verbal and Informal Written Communication	YELLOW	RED	GREEN	YELLOW	GREEN	GREEN
L. Personnel Performance	GREEN	YELLOW	GREEN	YELLOW	GREEN	RED
M. Equipment/Infrastructure	GREEN	GREEN	GREEN	GREEN	GREEN	N/A
N. Personnel	GREEN	GREEN	GREEN	YELLOW	N/A	GREEN
O. Mining Conditions	GREEN	GREEN	GREEN	YELLOW	YELLOW	GREEN
P. Mining Location	GREEN	GREEN	GREEN	N/A	N/A	N/A
Q. Safety Culture	GREEN	GREEN	GREEN	YELLOW	GREEN	YELLOW
OVERALL – BASE RISK	YELLOW	RED	GREEN	RED	YELLOW	RED

Figure 3

The Holmes Safety Bulletin – Spreading the Safety Message

JAN 1979

Chapter Notes

Sharing safety information with the mining community has been a primary objective of the Joseph A. Holmes Safety Association since its founding. Initially, the association met this objective by publishing monthly Holmes Safety Chapter Notes which featured both safety tips and accident statistics submitted by the Local and District Chapters. The association distributed the publication monthly to State, District, and Local chapters.

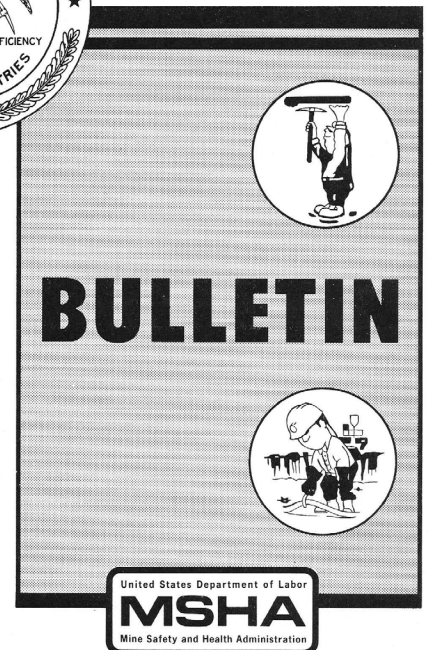
William H. (Bill) Hoover was named, in 1964, as National Secretary/Treasurer. One of his jobs was to oversee the compilation and distribution of Chapter Notes. The association's rapid growth and expansion was reflected in a corresponding increase in the publication's size and scope. A typical issue, in 1975, sent to approximately 45,000 subscribers, contained between six and eight feature articles. Preparing Chapter Notes stretched the Bureau of Mines' printing office to its maximum capacity each month to meet the demand.

The Holmes Safety Bulletin

By 1978, all involved knew that this situation had to be corrected. A year later it was decided to combine the safety topics and chapter information into a monthly publication: the Holmes Safety Bulletin.

Hoover reported at the annual meeting that, "... all chapter and council members were notified that a more practical and economical safety bulletin would be produced and distributed monthly. [It would] contain training and safety programs, training tips and remarks, [readers could expect to find] some new projects in there, like data bank, news break, last word, and updates.

However, we are not completely satisfied that the present bulletin is the final answer; we intend to



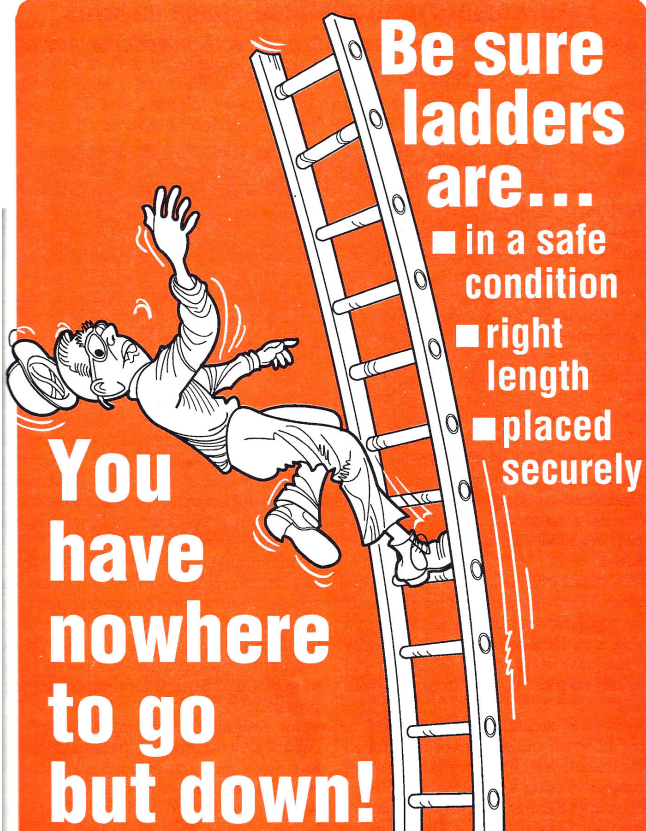
SPREADING THE SAFETY MESSAGE - 1979 Cover of the Holmes Bulletin

improve it more. Important features of the monthly bulletin will be from 9 to 11 safety topics and articles. There will be a multiple choice of numerous articles in any one month for the safety directors of the metal, nonmetal, coal, surface and underground mining industry. Also included will be topics for cleaning plants, mills, reduction plants, and trucking operations."

The first bulletin, a modest black and white 15-page publication, was printed and mailed in January 1979. It included safety tips, fatality overviews, and posters. A favorite among readers was a page called "The Last Word" which included a few fun facts, random thoughts, and even some short jokes submitted by the editor.

In 1980, the Bulletin assumed the familiar white and "safety green" layout that was its trademark for the next 20 years. By 1981, the association

December 1992



SPREADING THE SAFETY MESSAGE - December 1992 Cover of the Holmes Bulletin

had grown to 1,250 chapters and was producing 19,000 copies of the Bulletin annually.

The Holmes Safety Bulletin continued to be published in Denver, Colorado until 1985. It was published in Pittsburgh, Pennsylvania from 1985-1991.

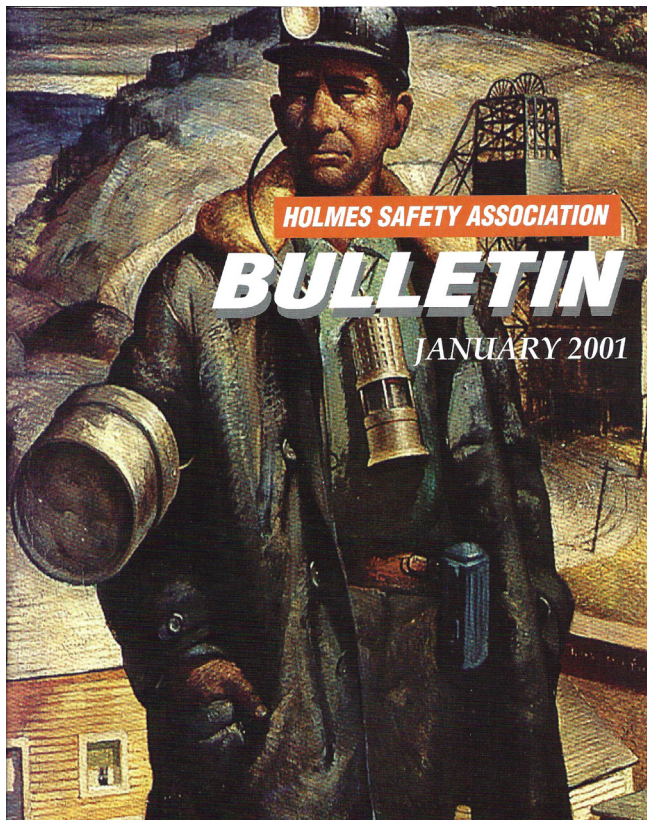
At the 1990 Holmes Safety Association annual meeting, it was announced that the Bulletin would be developed in Arlington, Virginia with the cooperation of MSHA-EPD. New computer equipment enhanced the production process and the Bulletin's layout was modernized. By 1992, the publication included color text and posters in each issue and by 1995 the Bulletin featured full-color covers.

In 1999, publication of the Bulletin was moved to the National Mine Health and Safety Academy's Instructional Materials Department. It's graphics and internal appearance was further updated at that time.

From Chapter Notes to modern publication, the Holmes Safety Bulletin fulfilled its mission of spreading the word about mine safety throughout the Nation.



SPREADING THE SAFETY MESSAGE - February 1995 Cover of the Holmes Bulletin



SPREADING THE SAFETY MESSAGE - January 2001 cover of the Holmes Bulletin

The Joseph A. Holmes Safety Association Awards

A Century of Safety and Improvement

The Joseph A. Holmes Safety Association (JAHSAs) has a long-standing tradition of recognizing both companies and individuals who contribute to its primary goal of improving safety in the Nation's mines.

At the first annual (JAHSAs) meeting in Washington, D.C. on March 4, 1916, the following resolution was passed stating the association award plans:

- (1) The making of one or more annual awards with or without honorariums, to be known as the "Holmes Safety Award", for the encouragement of those originating, developing, and installing the most efficient safety devices, appliances, or methods in the mining, quarrying, metallurgical, and mineral industries previous to the close of the preceding calendar year; these awards to be the result of reports and investigations made by the secretary and representatives of the association.
- (2) The awarding of suitable medals, from time to time, for personal heroism or distinguished service in the saving of life, in any branch of mining, quarrying, metallurgical and mineral industries.

The association goal was to highlight safety in the mining industry to the public and to stimulate the safety movement by giving suitable awards.

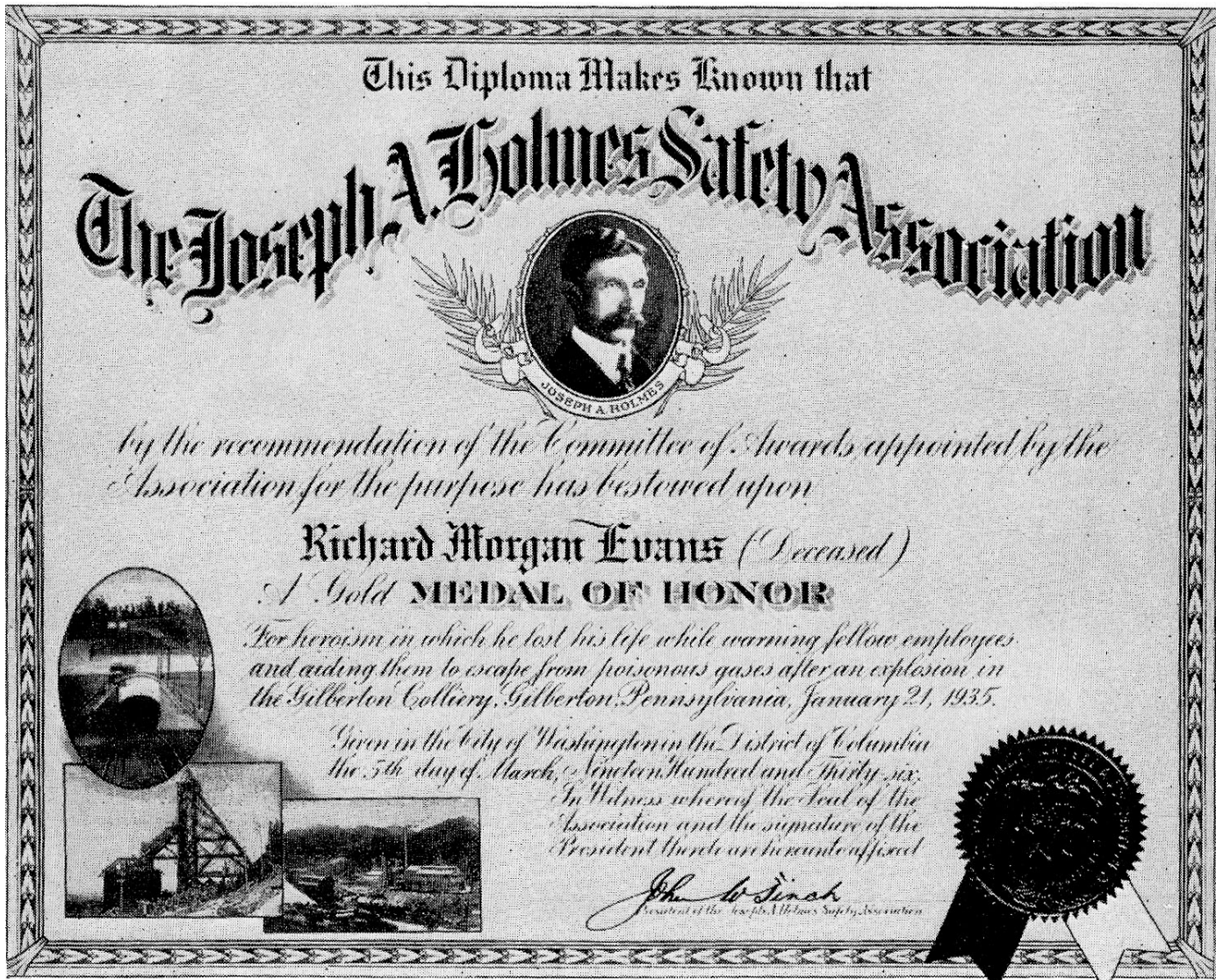


THE JOSEPH A. HOLMES SAFETY ASSOCIATION AWARDS - The Gold Medal of Honor.

Under the guidance of association secretary, David T. Day, the organization launched immediately a campaign to raise an endowment of \$100,000 to purchase suitable annual awards.

However, because of the United States' entry into World War I in 1917, fundraising fell far short of this goal and only \$11,000 was collected. These funds were invested and the interest was used annually for the purchase of awards.

Although the association's original goal was to issue awards related to safety devices, appliances and methods, it was decided that such awards could not be made until the group increased its endowment fund. Therefore, between 1919 and 1927, only awards for heroic service were presented.



THE JOSEPH A. HOLMES SAFETY ASSOCIATION AWARDS - The Joseph A. Holmes Safety Association's Certificate of the Gold Medal of Honor.

1919 - The First Hero Awards

On October 1, 1919, Dr. Van H. Manning, Director of the Bureau of Mines and president of the association announced the first awards at the dedication of the Bureau's Experimental mine at Pittsburg, Pa. Sixteen gold medals were presented for heroic service in the saving or attempting to save life.

Exact wording on certificates is given:

NEAL BRENNAN
WILLIAM G. MITCHELL
who died attempting to save life in Pennsylvania
Mine, Butte, Montana
February 14, 1916.

THOMAS COONEY
GRANITE J. FROWEN
for saving life in Pennsylvania Mine,
Butte, Montana
February 14, 1916.

MANTUS DUGAN
who died after saving lives of 27 miners Speculator
Mine, Butte, Montana
June 8, 1917.



THE JOSEPH A. HOLMES SAFETY ASSOCIATION AWARDS - Presentation of certificate of honor awarded to the Harwick Mine, Harwick Coal and Coke Co., Harwick, Pa., by J. J Forbes (right), secretary of Joseph A. Holmes Safety Association, May 22, 1936.

JOHN CALVIN FARMER

who died in attempting the rescue of two miners,
Havaco, W. Va.
December 21, 1918.

SAMUEL JONES

who died in mine attempting the rescue of John Calvin Farmer, Havaco, W. Va.
December 21, 1918.

GEORGE WASHINGTON KEITH

for hazardous risk taken in mine in effort to rescue John Calvin Farmer, Havaco, W. Va.
Dec. 21, 1918.

ADAM B. MITCHELL
HENRY CLAY TURNER

for hazardous risk taken in mine assisting in rescue of G. W. Keith, Havaco, W. Va., December 21, 1918.

CLYDE FOLTZ
SAMUEL HARDY

who died attempting rescue of imprisoned miners, Mt. Braddock, Pa. January 20, 1919.

LEWIS MEREDITH JONES

who died attempting to save imprisoned miners, Barrackville, W. Va. October 20, 1916.

AUGUST KLAUS
FRANK KRUM
MICHAEL SOFTCHECK

for assisting the rescue of two imprisoned miners, Mt. Braddock, Pa., January 20, 1919

Gold medals for heroic acts were the only class of medal presented during this period, but so many nominations were presented to

Miner Who Gave Life for Son in 1911 Given Holmes Award

Moses Evan Kennedy, a miner for the Wear Coal Co.'s Mine No. 20 near Pittsburg, Kans., gave his life in 1911 so his son, Joseph Kennedy, might live. Recently, Moses Kennedy was posthumously honored with a Joseph A. Holmes Safety Assn. Medal of Honor Certificate.

On Dec. 8, 1911, Kennedy, known in the mine as Bill, and 12 other men were working in a room when they encountered bad air. According to a local newspaper, men rushed to safety outside of the room. Moses Kennedy was one of those who escaped.

After the miners were safely out of the room in which there were toxic gases, one of them cried, "Joe is in there unconscious." Moses Kennedy shoved a cart to the entrance and asked for volunteers to help him in the rescue.

With several other miners, he went back into the room to rescue Joe. When they reached him, they put his body in the car and shoved it into the fresh air of the larger passageway.

"Mr. Kennedy fell dead as he emerged from the entrance. His body was taken to the surface with the other men and it was then found that life was extinct, the Pittsburg newspaper said, adding, "A few minutes later the younger Kennedy was able to walk to his home, bearing sad news.

The long-forgotten feat of heroism was brought to light by Ms. Wilma Kennedy Hosman, one of the seven surviving grandchildren of Mr. Kennedy. Ms. Hosman had been reminded of the story while doing research into her family history for a report. She inquired of Sen. Robert Dole, R., Kans. About the possibility of getting posthumous recognition for her grandfather, and was referred to MSHA, which administers the Joseph A. Holmes Safety Assn. awards program.

This Spring, Assistant Secretary Ford wrote to Ms. Hosman in part as follows:

"It is my privilege to commend and extend special recognition in memory of Mr. Kennedy considering the severe physical stress endured and the conditions under which he saved the life of his son, Joseph Kennedy. We are proud of him for his heroism and for doing something beyond the ordinary to help others." Sen. Dole presented the Medal of Honor Certificate to Ms. Hosman.

The Joseph A. Holmes Safety Assn. awards for outstanding safety achievements, personal heroism or distinguished service in saving a life in the mineral industry are presented to stimulate safety activities and to bring safety to the public's attention.

the association that a decision was made to create three classes of medals: gold, silver, bronze, and to present certificates of honor according to the degree of risk involved in performing the meritorious service.

It was also decided to limit these awards to workers in the mining and allied industries who performed acts in which their lives had been risked or actually lost.

These meritorious service awards came to be known as "hero" awards. Between 1919 and 1934, a total of 186 awards were issued, including 72 gold medals.

Heroic acts were performed on 84 occasions; 43 awards were made for service at fires, 33 awards in connection with explosions, and 110 awards in connection with miscellaneous accidents.

1927 - Safety Awards

On February 16, 1927, a special meeting of the board of directors was held to discuss the classes of awards which could be made for persons or companies developing meritorious safety devices or methods or having exceptional safety records. A motion was passed authorizing a certificate of honor to be given in three areas:

1. Safety devices
2. Safety methods
3. Exceptional safety records of mines or organizations.

The initial four exceptional safety awards were presented to the following:

Muncie Mine
Federal Mining and Smelting Company
Baxter Springs, Kansas

Ford Collieries Company
Custisville, Pennsylvania

Speed Open Limestone-rock Quarry
Louisville Cement Company
Speed, Indiana

No. 6 Mine
United States Coal & Coke Company
Gary, W. Va.

Recognition by the Holmes Safety Association was highly prized by mining companies. Awards were presented annually and competition was intense.

From 1927 to 1934, 283 awards were made to mines, plants, companies, associations, or individuals.

In 1937 a new category was added to recognize individuals for efficient application of first-aid methods.

By 1938, almost 1,000 awards had been presented, including 640 for the meritorious safety records and 281 for heroic acts.

For the next three decades, these awards constituted the major activity of the association and were believed to exercise a "vital effect" upon safety in the mining industries.

The Awards Program - Moving Forward

After 100 years of service, the Joseph A. Holmes Safety Association continues to honor those who have made contributions to mine safety.

The original Safety Award still honors companies with outstanding safety records. The original Hero award has evolved into an Act of Heroism award which continues to honor those who risked their lives for others.

However, the association has also expanded its efforts to recognize outstanding achievements in mine safety.

On April 25, 1966, the association approved the creation of its highest award, the Merit Award.

The first applicants for this honor were recognized and approved in April 1967.

In 1993 the Ival VanHorn Activity award was established to recognize the special efforts of association members to increase



THE JOSEPH A. HOLMES SAFETY ASSOCIATION AWARDS - Presentation of certificate of honor awarded to the Buck Mine, Verona Mining Co., Caspian, Mich., June 1938.

membership and participation.

In 1995, the JAH William (Bill) Hoover Lifetime Achievement Award was created in recognition of 35 years of dedicated service as National Secretary/Treasurer of the association.

The first Hoover Lifetime Achievement Award was presented to retiring association president Harry Tuggle that same year.

Each year at the Annual National Meeting, numerous individuals, groups, and organizations are recognized for promoting the ideals of the association and for working toward the ultimate goal of safer mines.

The following JAHSAs awards are presented at the Annual National Meeting:

- Merit Award
- 10/20/30/40 Year Active Member Award

- Safety Award
- Special Recognition
- Man and Woman of the Year
- Chapter Organizing Recognition
- District Council Safety Competition Award
- Act of Heroism Award
- Ival VanHorn Activity Award
- William H. Hoover Lifetime Achievement Award

As was stated by D. (Daniel) Harrington, Chief, Health and Safety Division, Bureau of Mines, in 1935 while discussing the goals and achievements of the association, "Accident prevention is a journey, rather than a destination."

Under the careful guidance of the Joseph A. Holmes Safety Association, the journey continues.

organization...It does not favor the mine operator as against the miner, but it does strive continually to advance the welfare of all those who labor in the mineral industries and its work is for the benefit of those industries and for the public.”¹³

Money was always a problem when trying to put plans and programs into effect. For example, on March 3, 1915, Congress passed an act (40 Stat, 1959) to expand the scope of mine rescue stations and cars throughout the United States and into the Alaska Territory. Holmes worried about where the money was to be found. Another example was that ...“lack of funds prevented the continuance of tests of...supports for both coal and metal mines....”¹⁴

Holmes was a strong man, but his workload led to failing health. He contracted tuberculosis in 1914 and moved from Washington, DC, to Denver. He continued driving himself relentlessly. A trip to Alaska worsened his condition and he died on July 15, 1915, at Denver.

Van H. Manning succeeded Holmes as Director of the Bureau and he wrote the following tribute to Holmes.¹⁵

In praise of Dr. Joseph A. Holmes

“Dr. Joseph A. Holmes, the first Director of the Bureau of Mines, through whose efforts chiefly the bureau was established and built up, died at Denver, Colo., on July 13, 1915, in his 56th year. Though failing health had compelled him to leave Washington in the summer of 1914, Dr. Holmes continued to direct the policy of the bureau, to exercise a general supervision of its investigations, and to work on plans for increasing its usefulness until a short time before he died. His illness and death can be attributed to his courage, his eagerness to lead and his devotion to duty,

which impelled him to risk his life and overtax his strength in his efforts for the safety of the miners and his advancement of the mineral industries of this country.

As Dr. Holmes was personally known to thousands and many tributes have been and will be paid to his character and achievements, I will not attempt here to describe how strongly he labored for the public good, nor to express the respect and admiration that I felt for him; but in taking charge of the work of the Bureau of Mines I freely acknowledge the pleasure and the inspiration I have derived from being associated with him during the time that he was director. I sincerely thank all who have labored to upbuild the bureau and to advance its purpose, and I assure everyone that as director I shall constantly strive to make the bureau the great agency for the increase of safety and efficiency that Dr. Holmes wished it to be.”

Van H. Manning, Director

Notes

1. U.S. Mine Safety and Health Administration. Fatality Figures.
<http://www.msha.gov/stats.chartshome.htm>
(Link active April 2016)
2. Humphrey, H.B. Historical Summary of Coal-Mine Explosions in the United States, 1810-1958, Bureau of Mines Bulletin 586. Washington: Government Printing Office, 1959, passim.
3. U.S. Department of the Interior. Fifth Annual Report of the Director of the Bureau of Mines to the Secretary of the Interior for the Fiscal Year Ended June 30, 1915. Washington: Government Printing Office, 1916, p. 2. (Hereafter cited as 1915 Annual Report)
4. Ibid., p.2.
5. Ibid., p.2.
6. See “Joseph A. Holmes.”
<http://ncpedia.org/biography/holmes-joseph-austin> (Link active March 2016)
7. U.S. Department of the Interior. First Annual Report of the Director of the Bureau of Mines to the Secretary of the Interior for the Fiscal Year Ended June 30, 1911. Washington: Government Printing Office, 1912, p.2.
8. 1915 Annual Report, p. 4.
9. Ibid., pp. 5, 8

10. Ibid., p. 37
11. Thompson, J.P., United States Mining Statutes Annotated, Part II-Miscellaneous Mining Subjects, Bulletin 94, Serial 4. Washington: Government Printing Office, 1915, pp. 917-918.
12. 1915 Annual Report, p. 37
13. Ibid., p. 2
14. Ibid., p. 33
15. Ibid., front matter

Guide to Additional Sources

For more background on Holmes, see

“In the Beginning: The Early Days of Mine Rescue.” Joseph A. Holmes Safety Association Bulletin, March-April, 2014, pp. 18-20.

Find The North Carolina Geological Survey’s mission statement at:

<http://deq.nc.gov/about/divisions/energy-mineral-land-resources/north-carolina-geological-survey> (Link active March 2016.)

For information on Holmes and the Good Roads Movement in a state and national context, visit: <http://www.learnnc.org/lp/editions/nchist-newcentury/4971> to find out more about the North Carolina Good Roads Association in both a state and national context. (Link active March 2016.)

Holmes participated in all phases of conservation and resource management. See

The Evolution of the Conservation Movement, 1850-1920. Available at [http://memory.loc.gov/cgi-bin/query/r?ammem/consrvbib:@FIELD\(NUMBER\(vl024\)\)](http://memory.loc.gov/cgi-bin/query/r?ammem/consrvbib:@FIELD(NUMBER(vl024))) (Link active March 2016.)

Find out more about the St. Louis World’s Fair at

“Topics in Chronicling America – St. Louis World’s Fair (The Louisiana Purchase Exposition, 1904” at <https://www.loc.gov/r/news/topics/stlouis.html> (Link active March 2016.)

Read more about U.S. Geological Survey at

Rabbitt, Mary. The United States Geological Survey: 1879-1986 (U.S. Geological Survey Circular 1050) available at <http://pubs.usgs.gov/circ/c1050/index.htm> (Link active March 2016.)

continued from Page 12

2014-2015 thought the models were helpful in improving the safety in their mining operations. Below are some of the comments from participating companies:

- “Impressed by the dialog inspired among the workforce.”
- “Made us think about things that have been taken for granted.”
- “The ‘focus group’ environment fully engaged our mine management and staff throughout assessment.”
- “Produced new understanding and insights about our preparedness to further reduce risk.”
- “We were able to engage on substance with each other.”
- “This workshop was geared towards real issues within mines.”
- “This workshop allowed for everyone’s input, which was really useful.”
- “Allowed to both provide the rating as well as fully explain it.”

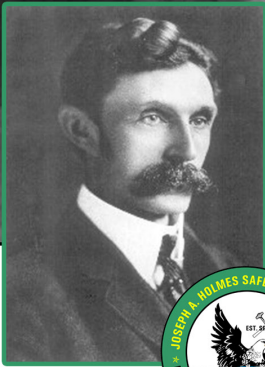
- “The models can be used as a checklist for critical issues within the mine.”
- “This can be adapted to several other areas throughout the mine.”
- “This workshop increased our overall self-awareness. Tremendous asset to limit risk and reduce insurance costs.”

Next Steps

Feedback from mining companies that participated in self-assessments have been encouraging. Plans include modifying the models for use in metal and nonmetal mines. Plans also include development of an independent governance framework to assist the entire mining industry with continued use of the models and sharing sanitized results across the industry to highlight trends.

By:

David Stalfort
 Senior Director
 ABS Group
 1525 Wilson Blvd. Suite 625
 Arlington, VA 22209



100th Anniversary JAHSA





Joseph A. Holmes Safety Association

Scholarship Information

Applicant Qualifications: *You must be pursuing a degree in a mining-related major to be eligible to apply for this scholarship.*

You must complete and submit the Joseph A. Holmes Safety Association (JAHSA) Scholarship Application to be eligible for scholarship award consideration. The application has been designed to fill out partial information via computer; however, you must print and mail the completed application by the application deadline (to be determined for 2017).

The deadline will provide adequate time for the JAHSA reviewing committee to evaluate applications and award scholarships for the 2017 Fall Semester.

Applications received after the deadline will not be considered. Applications submitted with any missing information will be ineligible for scholarship consideration.

All applicants will be notified by mail no later than June 30, 2017. For additional information send your questions to Sylvia Ortiz at silvicort@yahoo.com. **Please no calls.**

Mail Completed Application to:

Sylvia Ortiz
Joseph A. Holmes Scholarship Committee
829 Picadilly Drive
Pflugerville, Texas 78660

Application Checklist

Prior to submitting your application, use this checklist to ensure that the required documents are completed, signed and enclosed. Do not leave any blank spaces.

If a line item does not apply to you, mark the space with (N/A) for not applicable.

1. Completed seven-page application
2. Official Transcript of grades for the last three years of completed education – attachment
3. Complete Financial Disclosure Section
4. Write a 200-300 word essay and add as an attachment
5. Extracurricular Activities – add as an attachment
6. Make a copy of all documents for your records
7. Mail original application for receipt by or before the deadline

Visit www.holmessafety.org and click the **Scholarship** link for more information.



For address changes and new subscription requests, contact:

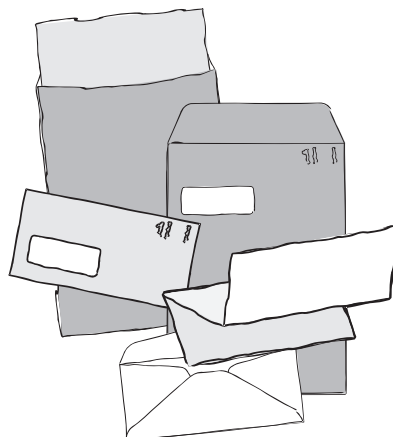
Glen Poe
Joseph A. Holmes Safety Association Bulletin
Mailing List
MSHA-US DOL
1301 Airport Road
Beaver, WV 25813-9426
Tel: 304-256-3223, Fax: 304-256-3319
E-mail: poe.glen@dol.gov

Please address any comments or suggestions to:

Glen Poe
Tel: 304-256-3223 Email: poe.glen@dol.gov

Jeff Kravitz
Tel: 412-386-6923 Email: kravitz.jeffery@dol.gov

Joseph A. Holmes Safety Association Bulletin
DOL-MSHA
National Mine Health and Safety Academy
1301 Airport Road
Beaver, WV 25813-9426
Fax: 304-256-3461



JAHSA National Executive Officers

President:

Jeff Kravitz, VA (Federal)

1st Vice-President:

Mark Zinser, MI (Labor)

2nd Vice-President:

Shad Montgomerie, IN (Management)

3rd Vice-President:

William Gerringer, NC (State)

4th Vice-President:

Ben Hart, FL (Management)

General Secretary:

Glen Poe, WV (Federal)

Treasurer:

Cotton Jerrell, NM (Management)

HMR National Executive Officers

President: Jim Vicini

General Secretary: Jeff Kravitz

Treasurer: Richard West

Vice President [Coal] Mine Rescue Teams: Ronnie Smith

Vice President [Coal] Trainers: Don King

Vice President [Coal] Management: none [President is a member of group]

Vice President [Coal] Labor: Dennis Odell

Vice President [Coal] States: Randy Moore

Vice President [Coal] Federal: Kevin Stricklin

Vice President [MNM] Mine Rescue Teams: Steve Setzer

Vice President [MNM] Trainers: Sammy Linville

Vice President [MNM] Labor: Kent Ball

Vice President [MNM] States: Bill York-Feirn

Vice President [MNM] Federal: Neal Merrifield

Vice President [MNM] Vendors - Kent Armstrong



Joseph A. Holmes Safety Association
P.O. Box 9375
Arlington, Virginia 22219