

INDEPENDENT CONTRACTOR TRENDS IN THE UNITED STATES MINING INDUSTRY

E A Barrett, Mining Engineer
B Fotta, Research Methodologist
L L Rethi, Training Research Specialist

Mining Systems and Human Engineering
U S Department of Energy
Pittsburgh Research Center
Pittsburgh, PA, USA

Abstract

Employment and accident trends of independent contractors working at coal and noncoal mines in the United States are reported. Data include employee hours and accidents, both fatal and nonfatal, from 1985 through 1994. Also noted are increases or decreases in certain accident classifications and accident rates, particularly those which have shown significant change during the ten-year period.

Introduction

The Mine Safety and Health Administration (MSHA) defines an independent contractor as "any person, partnership, corporation, firm, association or other organization that contracts to perform services or construction at a mine." This definition excludes those employees who work for a parent company that owns or leases a mine (known as a "contract mine"). MSHA considers the latter to be mine company employees, not independent contractors. Some common independent contractor job classifications in the United States include electrician, truck driver, welder, driller, blaster and equipment operator.

From 1985 through 1994, the number of independent contractor employees hired by mine companies in the United States increased by more than 100%. In contrast, the number of mine company employees decreased by 12% during this same period. As a result, the proportion of independent contractor employees in the mining workforce grew from 5% in 1985 to 17% in 1994.

One effect of this expanded presence of independent contractors on mine property has been an increasingly significant proportion of mining accidents to their employees. For instance, independent contractors accounted for over half of the fatalities that occurred at surface coal mines from 1992 through 1994. According to MSHA's statistics, fatality incidence rates (the number of fatalities per 200,000 employee hours) for independent contractors have been higher than those for operator employees in 12 out of the past 13 years (Figure 1).

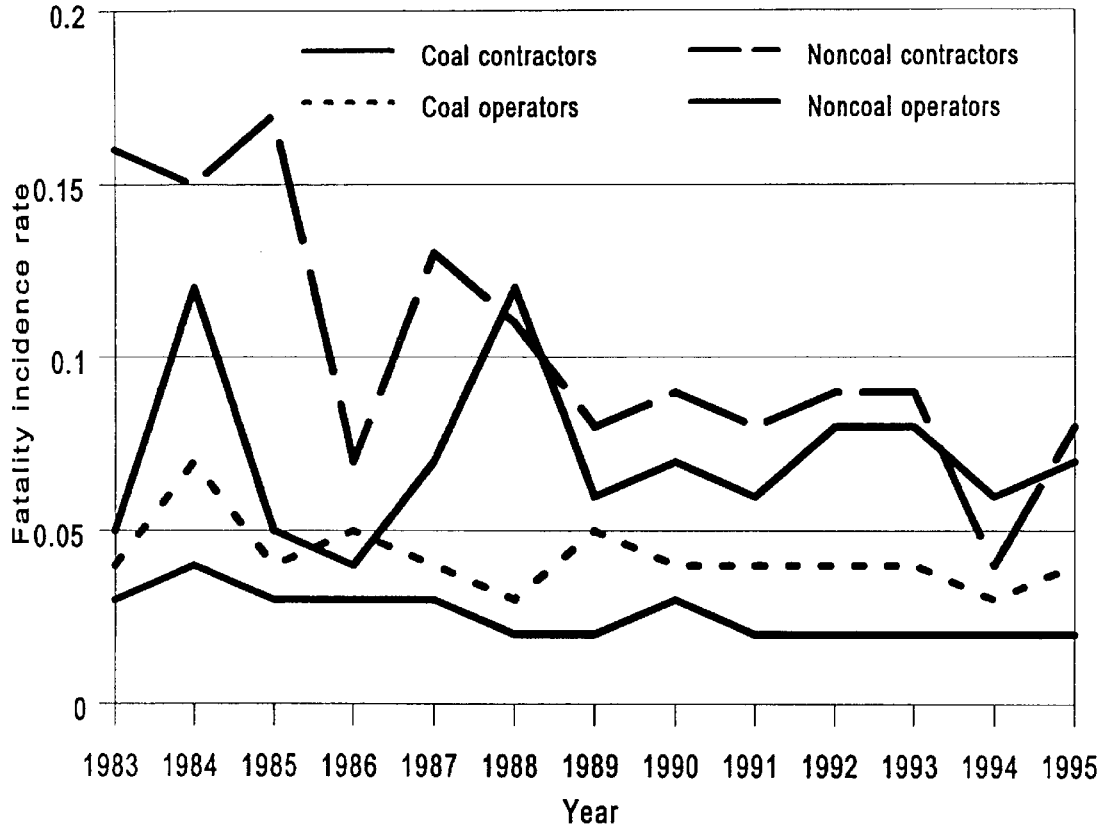
This report is a summary of employment and accident trends from 1985 through 1994 for independent contractor employees working in the coal and noncoal segments of the mining industry. Within each segment, trends are discussed for these locations: underground mines, surface area of underground mines, surface mines and preparation plants or mills. Data on the number of employee hours and accidents were obtained from MSHA.

Independent Contractor Trends in Coal Mining

Table 1 summarizes employee hours and accidents for independent contractors working at four coal mine locations within two time periods, 1985-87 and 1992-94. The three-year totals are used to establish trends because, in a single year, the number of incidents per

location are relatively few in number and highly variable. Table 1 statistics are discussed in the following sections, beginning with underground mines.

Figure 1



Fatality Incidence Rates for Independent Contractor and Operator Employees at Coal and Non-Coal Mines

(1995 rates are taken from preliminary MSHA data)

Underground Mines, Coal

In underground coal mines, independent contractor employee hours increased by 172% from 1985-87 to 1992-94. The 7.9 million hours reported during 1992-94 accounted for 2.5% of all underground coal mine employee hours. Although no fatalities occurred in either time period at this location, both the numbers and rates of lost day accidents increased such that independent contractors accounted for 2.9% of all underground coal mine accidents during 1992-94.

Growth in the overall accident rate (the number of accidents per 200,000 employee hours) from 11.68 (1985-87) to 13.42 (1992-94) reflected increased rates for materials handling accidents, slips and falls, ground falls, and accidents involving powered haulage. The largest increase was noted for powered haulage where the accident rate changed from 0.34 to 1.21.

Surface Area of Underground Mines, Coal

At surface areas of underground coal mines, independent contractor employee hours increased by 120%, from 7.3 million hours during 1985-87 to 16.1 million hours during 1992-94. During 1992-94, independent contractors accounted for about 34% of the hours,

56% of the fatalities, and 12% of the accidents reported for all employees working at this location.

Table 1

Independent Contractor Trends In The Coal Industry.

Mining Location	Years	Employee Hours		Accidents ^b		Fatalities	
		Number ^a	% of all hours	Number & Rate ^c	% of all accidents	Number & Rate ^c	% of all fatalities
Underground mines	1985-87	2.9	0.6	172 11.68	0.8	0 0	0
	1992-94	7.9	2.5	530 13.42	2.9	0 0	0
Surface area of underground mines	1985-87	7.3	13.3	78 2.14	5.1	4 .11	18.2
	1992-94	16.1	34.4	154 1.96	11.7	5 .06	55.6
Surface mines	1985-87	23.7	6.9	303 2.56	6.3	7 .06	14.6
	1992-94	42.3	13.2	485 2.29	11.7	19 .09	45.2
Preparation Plants	1985-87	9.3	8.7	260 5.59	11.2	1 .02	6.3
	1992-94	17.4	18.7	270 3.10	12.6	7 .08	53.8

^aMillions of hours.

^bIncludes injuries resulting in either permanent disabilities or lost workdays or both, but excludes injuries resulting only in days of restricted work activity.

^cRates (in bold) are the number of accidents or fatalities per 200,000 employee hours.

Although the overall accident rate for independent contractor employees decreased slightly (from 2.14 to 1.96 accidents per 200,000 employee hours), powered haulage accident rates increased by 58% from 0.19 (1985-87) to 0.30 (1992-94). Additionally, while truck drivers accounted for 9% of the independent contractor workers injured in powered haulage accidents from 1985-87, they accounted for 22% of the injured workers during 1992-94.

Surface Mines, Coal

Employee hours of independent contractors working at surface coal mines increased by 77% over the ten-year period. With 42.3 million hours reported during 1992-94, independent contractors accounted for 13% of all employee hours and 12% of all accidents at this location. They also accounted for 45% of all the fatalities (19 of 42) at surface coal

mines during these ten years. Almost half of these fatalities (8 of 19) were classified as powered haulage.

Although the overall accident rate for independent contractors working at this location decreased slightly from 2.56 to 2.29, the rate of powered haulage accidents more than doubled from 0.14 to 0.32. Additionally, the proportion of injured independent contractor workers classified as truck drivers increased from 8% in 1985-87 to 18% in 1992-94.

Preparation Plants, Coal

At coal preparation plants, independent contractor employee hours increased by 87% from 1985-87 to 1992-94. With 17.4 million employee hours reported during 1992-94, independent contractors accounted for about 19% of all hours worked at coal preparation plants. During the 1992-94 period, they accounted for 13% of the accidents but incurred 54% of the fatalities (7 of 13). Over half of these fatalities (4 of 7) occurred in powered haulage accidents.

The overall accident rate for independent contractor workers at this location decreased substantially from 5.59 accidents per 200,000 employee hours in 1985-87 to 3.10 from 1992-94. This decrease reflects significant declines in the rates of all types of accidents, except for powered haulage rates which remained relatively constant. Additionally, truck drivers accounted for a greater proportion of the injured independent contractor workers, increasing from 8% in 1985-87 to 18% during 1992-94.

Independent Contractor Trends in NonCoal Mining

Table 2 presents corresponding MSHA data for independent contractors working in the noncoal segment of the mining industry. For clarification, "noncoal, underground mines" and "mills" include metal, nonmetal and stone operations; "noncoal, surface mines" include metal, nonmetal, stone and sand & gravel operations. Table 2 statistics are discussed in the following sections, beginning with underground mines.

Underground Mines, Noncoal

Independent contractor employee hours increased by 7% (2.7 to 2.9 million hours) from 1985-87 to 1992-94 at underground noncoal mines. During the 1992-94 period, they accounted for 4.5% of all underground noncoal mine employee hours, 6.2% of the accidents and 3.2% of the fatalities. Comparing these two time periods, the number of independent contractor fatalities decreased from five to one at this location.

Increases in the rates of both machinery and powered haulage accidents resulted in a slight increase in the overall accident rate from 5.08 (1985-87) to 5.32 (1992-94). Machinery accidents remained the leading cause of injury to independent contractor workers at underground noncoal mines, followed by materials handling accidents, slips and falls and accidents involving powered haulage.

Surface Area of Underground Mines, Noncoal

At surface areas of underground noncoal mines, independent contractor employee hours increased by 52% from 1985-87 to 1992-94. Independent contractor employees accounted for 16% of the total number of hours, 13% of the accidents and none of the fatalities reported for this location from 1992-94. Over the ten-year period, they experienced a significant decrease in their overall accident rate from 4.0 (1985-87) to 2.76 (1992-94).

Table 2

Independent Contractor Trends In The Noncoal Industry

Mining Location	Years	Employee Hours		Accidents ^b		Fatalities	
		Number ^a	% of all hours	Number & Rate ^c	% of all accidents	Number & Rate ^c	% of all fatalities
Underground mines	1985-87	2.7	3.7	74 5.29	4.3	5 .36	15.6
	1992-94	2.9	4.5	81 5.59	6.2	1 .07	3.2
Surface area of underground mines	1985-87	1.9	10.8	38 4.00	11.9	1 .11	14.3
	1992-94	2.9	15.5	40 2.76	13.2	0 0	0
Surface mines	1985-87	30.4	6.1	323 2.13	4.3	19 .13	18.1
	1992-94	52.8	9.9	490 1.86	5.9	21 .08	28.8
Mills	1985-87	15.4	3.6	359 4.66	5.0	6 .08	20.7
	1992-94	25.7	5.8	432 3.36	6.8	7 .05	25.9

^aMillions of hours.

^bIncludes injuries resulting in either permanent disabilities or lost workdays or both, but excludes injuries resulting only in days of restricted work activity.

^cRates (in bold) are the number of accidents or fatalities per 200,000 employee hours.

Surface Mines, Noncoal

At surface noncoal mines, employee hours of independent contractor workers increased by 74% over the past ten years. The 52.8 million employee hours reported during 1992-94 accounted for about 10% of all employee hours reported at this location. And while independent contractors accounted for 6% of the accidents during this same period, they accounted for 29% of the fatalities (21 of 73). Eleven of these fatalities occurred at stone mines, five at sand and gravel operations, three at metal mines and the remaining two at nonmetal surface mines. The accident classifications which had the highest number of fatalities were powered haulage (8) and machinery (6).

Mills

From 1985-87 to 1992-94, employee hours for independent contractors working at mills increased by 67%. With 25.7 million employee hours and 432 accidents reported during

1992-94, independent contractors accounted for about 6% of all mill employee hours and almost 7% of the accidents. Of the 27 fatalities occurring at mills from 1992-94, 26% (7 of 27) were independent contractor employees.

The accident rate for independent contractor employees at this location decreased from 4.66 accidents per 200,000 hours worked in 1985-87 to 3.36 accidents in 1992-94. This decrease reflects substantial declines in the rates of accidents due to handling materials and slips or falls; machinery accident rates, however, remained relatively constant.

Summary

The work force in the United States mining industry changed considerably from 1985 through 1994; the number of mine company employees decreased as the number of independent contractor employees sharply increased. All locations, with the exception of underground noncoal mines, experienced significant increases in the number of independent contractor employee hours. The largest number of independent contractors were employed at surface mines, both coal and noncoal.

In general, fatality incidence rates for independent contractor employees have exceeded those for operator employees during the ten-year period. The proportion of independent contractor fatalities to all mining industry fatalities was much higher at the following locations: surface area of underground coal mines, surface coal mines, preparation plants, surface noncoal mines and mills.

Finally, from 1985 through 1994, overall accident rates increased at underground coal and noncoal mines, and fatality rates increased at surface coal mines and preparation plants. Powered haulage accidents increased substantially at underground coal mines, the surface area of underground coal mines, surface coal mines and preparation plants.