LTAs drop 29% in 1999; fatalities reduced by 64%

THE LOST TIME INCIDENT RATE in the global drilling industry continued its longtime trend of improvement in 1999. In fact, the year-to-year decline in industry total lost time accidents from 1998 to 1999 was the most dramatic in recent years.

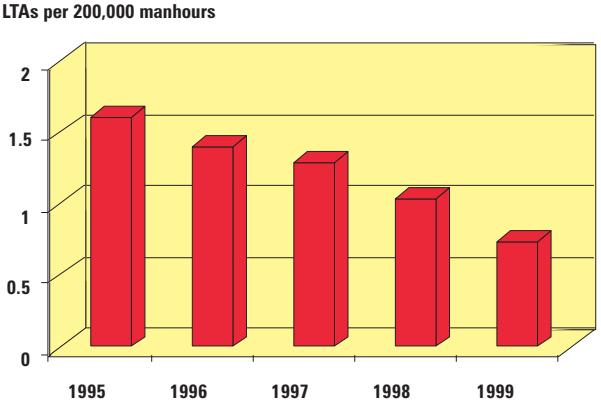
Industry wide, the rate of lost time incidents improved last year to 0.74/200,000 man hours, a 29% decline from the 1998 level of 1.04/200,000 man hours, according to the "1999 IADC Summary of Occupational Injuries."

Preliminary figures for the first quarter of this year indicated the trend of steadily improved safety for drilling personnel would continue in 2000.

The SOI is compiled annually from data volunteered by drilling contractors worldwide to the IADC Accident Statistics Program.

During 1999, 93 contractors participated in the ASP, representing a total of 172 million manhours worked, 629 LTAs and 9 fatalities.

Total industry accident frequency



Safety data are compiled separately for land and offshore operations and for three geographic regions—US, Europe and International. The international category includes all areas outside the US and Europe.

The "1999 Summary of Occupational Injuries" is available through IADC Document Service. Call **Loretta Krolczyk** at 1/281 578 7171, ext 215 (fax, 1/281 578 0589; publications@iadc.org).

Over an extended period, the record of the global drilling industry is impressive. Lost time incidents per 200,000 man hours worked by land and offshore drilling personnel worldwide have fallen from more than 14 in 1963 to 0.74 in 1999, a 21-fold improvement.

Compared with other selected heavy industries—railroads, construction, mining, agriculture—drilling's safety record is also excellent. While worldwide drilling recorded LTIs of 0.74/200,000 manhours in 1999, US mining recorded 2.1 LTIs per 200,000 manhours, US construction 2.7, and US railroads 3.4. Closest of the selected industries to worldwide drilling was UK construction with a 1999 LTI of 1.26.

FATALITIES DROP 64%

One of the most important safety accomplishments during 1999 was the reduction in fatalities from 25 the previous year to 9. Manhours worked by contractors participating in the ASP totaled more than 172 million.

Contractors in the European land and offshore categories together worked more than 23 million manhours without a fatality in 1999. European offshore is the larger of the two, accounting for almost 20 million manhours worked in 1999.

US land and offshore contractors together worked more than 62 million manhours and only 1 fatality occurred in the land category. No fatalities were reported in US offshore drilling. This is a dramatic improvement over 1998 when 6 fatalities occurred among US land contractors and 6 in the US water category.

International land contractors also made much improvement. They reduced fatalities from 9 in 1998 to 2 last year while working 44 million manhours.

International offshore contractors did not fare so well, however, suffering 6 fatalities while working 42 million manhours compared with 3 fatalities the previous year.

ALL GROUPS IMPROVE

Gains were made in reducing lost time accidents in all categories in 1999, contributing to the significant drop in the industry total.

Exceptional gains from the previous year were made in two categories: US offshore and European land drilling.

Lost time incidents among US offshore workers dropped by more than half year-to-year, from 0.68/200,000 manhours in 1998 to 0.31in 1999.

The European land LTI rate spiked in 1998 to 2.21 LTIs from 1.81 in 1997. But last year the rate was brought down to 1.03, recovering the ground lost in 1998 and them some. The European land category is the smallest and modest changes in the absolute number of incidents can have a large effect on the rate per 200,000 manhours.

International land drilling LTI rates also increased in 1998 but were brought below the 1997 rate last year.

European LTIs continued a downward trend in 1999. After increasing from 1995 through 1997 from 1.20 to 1.51, a dramatic reduction to 0.98 in 1998; the rate was lowered to 0.88 in 1999.

Although all categories of drilling have made substantial—sometimes dramatic—improvement in safety in the last 5 years, US land drilling is the only category that has had an uninterrupted improving trend from 1995 through 1999.

Percentage improvements in 1999 vs 1998 for the 6 categories are: US land,18%; US offshore, 54%; international land, 29%; international offshore, 17%; European land, 53%; and European offshore, 10%.

GREATEST RISKS

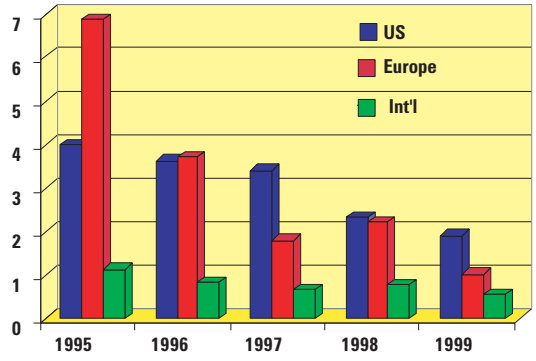
Injuries during drilling operations occur in many places around the rig and to all crew members. Many types of equipment and rig operations are involved in accidents and all parts of the body are at risk.

Injury data are analyzed by occupation, body part, accident type, equipment type, operation and location.

Data from the IADC Accident Statistics

Land accident frequency history, 1995-1999

LTAs/200,000 manhours



Program show that of all categories, the floorman suffers more than one-third of total LTAs (37.2%) for all occupations. Fingers, the most vulnerable part of the body, account for 19.5% of total injuries.

"Struck by" and "Caught between/in" are the most common causes of injury, each representing about 25% of the total accident types.

"Pipes/collars/tubulars" is the equipment category responsible for the most injuries at about 15%. And the operation that involves the most injuries is "Rig repairs/maintenance" at 13.7%; "Tripping in/out" is nearly as risky, responsible for 12.9% of the total injuries in 1999.

Finally, it is no surprise that by far the most accidents in drilling operations occur on the rig floor—33.7% of the total in 1999.

INJURY DETAILS

A breakdown of 1999 injury data by occupation shows that following the floorman at 37.2%, the next most frequently injured rig personnel are derrickman (14.8%); roustabout (13.1%); driller/assistant driller (7.4%); motorman (4.6%); and mechanic (3.1%). Welder injuries accounted for 1.6% of the total injuries. Those occupations with less than 1% of the total are electrician, crane operator, barge engineer/ballast, superintendent/other, truck driver, rig helper and truck helper.

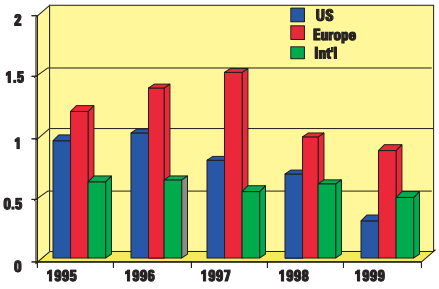
In the breakdown of data by body part, fingers were injured most frequently (19.5%), followed by back (12.9%); feet/ankles (12.1%); legs (11.7%); hands/wrists (8.7%); arms (5.8%); and head/neck (5.8%). Other injuries were to trunk/torso (6.3%); eyes (2.2%); and toes (1.7%).

Four types of accidents accounted for almost three-fourths of injuries to drilling personnel in 1999. "Caught between/in" was the most frequent (25.7%) followed by "Struck by" (25.5%); "Strain/over exertion" (11.3%); and "Slip/fall: different level" (10.2%). Other categories include "Slip/fall: same level" (8.5%) and "Cut" (1.7%). Those causes of injury with less than 1% of the total in 1999 include contact with chemicals/fluids, electric shock, flame/heat/steam, debris, exposure to weather, jump and vehicle.

Nineteen equipment items are included in the IADC ASP data in addition to the "Other" category, which in 1999 accounted for the most accidents (28%). The most dangerous equipment last year for the industry as a whole was "Pipes/collars/tubulars," accounting for 15.4% of all injuries. Following were "Tongs" at 8.5%; "Stairs/ladders/decks" at 7.6%; "Material" at 7.1%; "Hand tools: manual" at 5.4%; and "Ropes/cables/ chains/slings" at 4.6%. Also included in the injury data are "Motors/pumps/ machinery" (4.1%); "Elevators" (3.6%); and "Spinning chain" (2.8%).

Offshore accident history, 1995-1999

LTAs/200,000 manhours



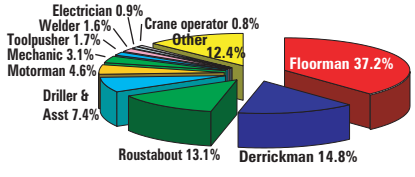
Injuries are spread over a number of activities, making "Others" the category with the highest percentage at 15.7%.

Following closely behind "Rig repairs/maintenance" (13.7%) in the 1999 data are "Tripping in/out" (12.9%); "Rigging up/down" (11.0%); "Laying down/picking up" (7.9%); "Routine drilling operations" (7.4%); "Making connection" (7.2%); and "Material handling: manual" (6.5%). According to the data, 4.3% of the injuries to rig personnel during 1999 occurred during "Walking."

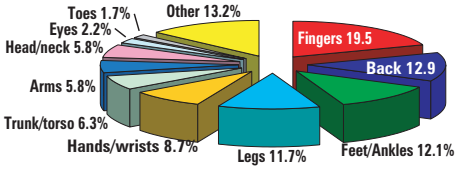
The location of injuries is also widely varied. The "Others" category accounts for a substantial share of the LTAs. The largest share of injuries occur on the "Rig floor" (33.7%), followed by "Rig pad/rig decks (general)" (8.3%); "Pipe rack" (6.5%); "Derrick" (5.2%); and "Mud pump/mixing room" (4.7%). And 3.3% of injuries take place in the "Catwalk/V-door" area.

To learn more, call **Barbara Burrage**, 1/281 578 7171, ext 217 (barbara.burrage @iadc.org).

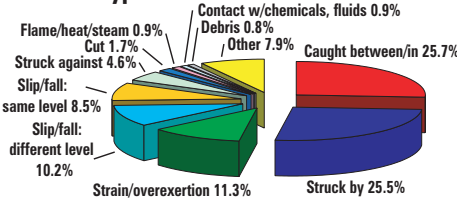
Occupation



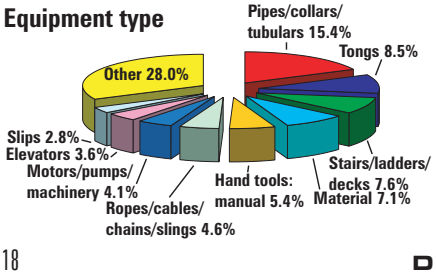
Body part



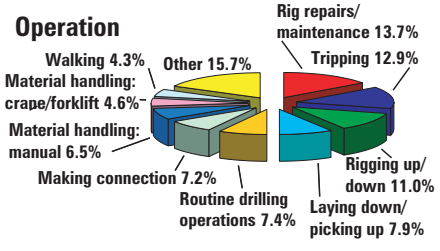
Accident type



Equipment type



Operation



Location