



Profile: Ship & Boat Building and Repair



Office of Maritime Enforcement

Industry Group 373 – Ship & Boat Building and Repair

Industry Description:

The ship building and repairing industry consists of establishments primarily engaged in building and repairing ships, barges, and lighters, whether self-propelled or towed by other craft. This industry also includes the conversion and alteration of ships and the manufacture of off-shore oil and gas well drilling and production platforms (whether or not self-propelled). [Note: Offshore rigs that are capable of transport on the water (i.e., can be floated and towed to their installation or production site) are considered to be “vessels” and, therefore, are covered by Part 1915 rules.] The boat building and repair industry consists of establishments primarily engaged in the building and repairing of craft such as fiberglass boats, motor boats, kayaks, canoes, houseboats, and dinghies.

Ship and boat building and repair activities comprise some of the most hazardous work place operations. Hazards include exposure to toxic substances, hazardous atmospheres, electrocution, falls, fires, and explosions. The SIC code for “Ship Building and Repair” is 3731. The SIC code for “Boat Building and Repair” is 3732. Shipbreaking is classified under “Water Transportation Services, Not Elsewhere Classified” {Dismantling Ships} SIC code 4499.

According to employment data published by the Bureau of Labor Statistics (BLS), the average total employment in U.S. private and public (Navy) shipyards for 2002 was 95,000. This total reflects an increase of approximately 1% from the 2001 revised average total employment for the shipbuilding and repairing industry. This is the first increase in the average total employment since 1998. The 2002 employment level in the U.S. shipbuilding and repairing industry is down 44% from the 1982 level of 171,600 employees. BLS data show the total employment for the boat building and repair industry to be 53,000 in 2002.

As of December 31, 2002, ships on order or under construction in U.S. private shipyards totaled 39 naval (1,000 light displacement tons and larger) and 16 commercial vessels (1,000 gross tons and larger). The U.S. Navy shipbuilding plan for fiscal years 2003-2008 includes the construction of 42 new ships, and represents an increase in new shipbuilding work available to the nation’s industrial base when compared with Navy programs for the past several years. The FY 2003-2008 program, with an average of seven new ships per year, represents a 5% increase in the quantity of ships being procured compared to the FY 2002-2007 plan. The Navy’s plan includes the construction of 13 guided missile destroyers (DDG-51/DD(X)), 8 attack submarines (SSN) and 6 amphibious transport ships (LPD).

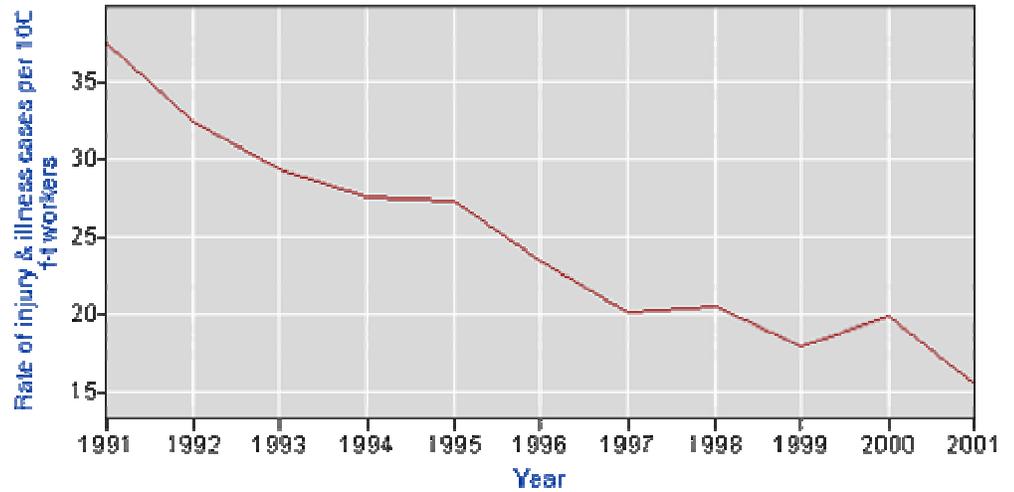
Regarding boat building, the National Marine Manufacturers Association (NMMA), in their 2003 statistical abstract, calculated total boat and water craft sales to be 1,276,800 units in 2003. This is an approximately 1% decrease from the 2002 figure of 1,289,300 units. These units include such diverse craft as jet boats, inboard and outboard motor boats, canoes, sailboats, dories, skiffs, and kayaks.

BLS Profile

Total Recordable Case Rate (Industry Group 373)

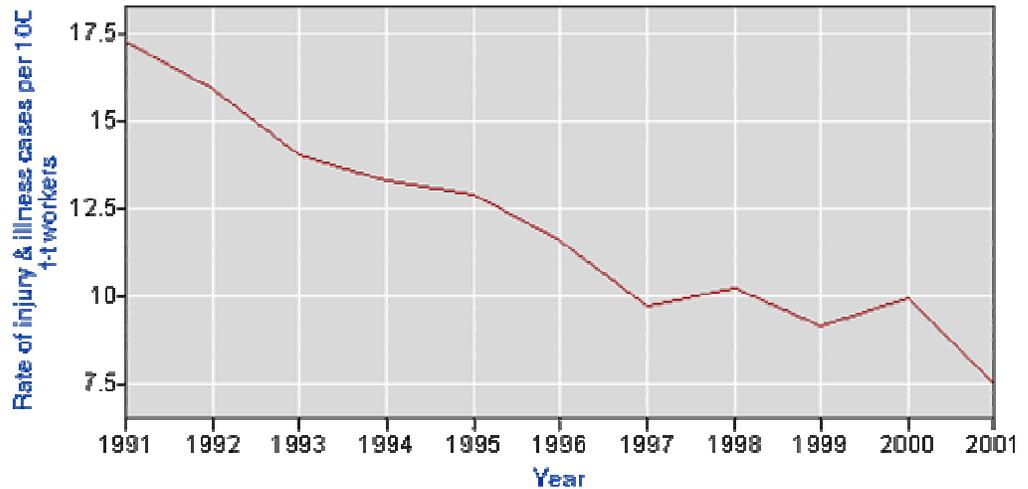
Year	Annual
1991	37.6(F)
1992	32.4
1993	29.3
1994	27.6
1995	27.3
1996	23.5
1997	20.1
1998	20.5
1999	18.0
2000	19.9
2001	15.6

F : Includes fatalities



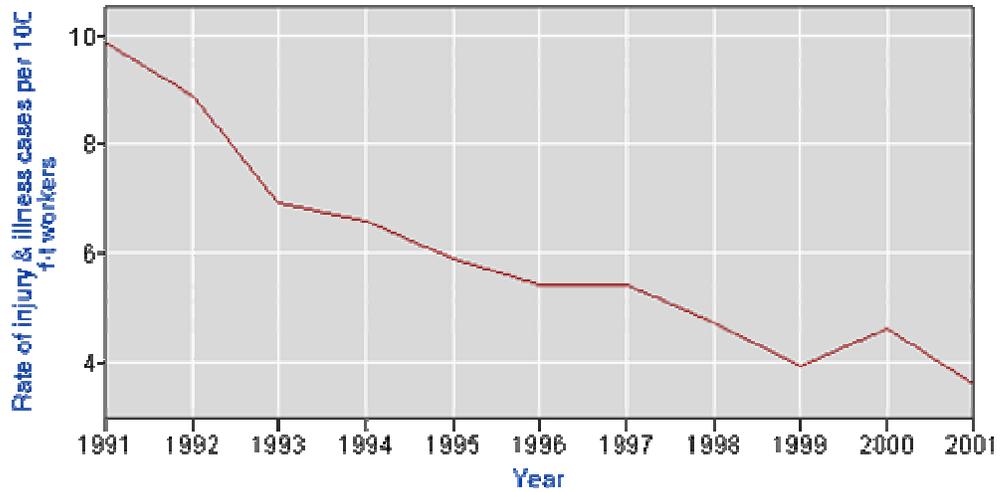
Lost Workday Case Rate (Industry Group 373)

Year	Annual
1991	17.3
1992	15.9
1993	14.0
1994	13.3
1995	12.9
1996	11.6
1997	9.7
1998	10.2
1999	9.1
2000	9.9
2001	7.5



Cases with Days Away Rate (Industry Group 373)

Year	Annual
1991	9.9
1992	8.9
1993	6.9
1994	6.6
1995	5.9
1996	5.4
1997	5.4
1998	4.7
1999	3.9
2000	4.6
2001	3.6



Fatality Rate for Industry Group 373 (2001): 5.7
National Average-All Industries (2001): 4.3

Source: Bureau of Labor Statistics (National data)

Fatality rates are number of fatalities per 100,000 workers and were calculated by the Office of General Industry Enforcement using BLS data.

National Summary by Region

NAICS 33661

Regions	Establishments with 10 or more employees		Establishments with 9 or fewer employees		Number of FY 2003 Inspections	
	Establishments	Employees	Establishments	Employees	Total	Programmed
1	75	2549	333	859	16	4
2	55	3214	140	360	3	1
3	80	4690	182	466	53	33
4	356	21927	912	2546	30	21
5	94	13278	281	698	8	3
6	206	13288	439	1094	22	7
7	27	3286	47	125	3	2
8	5	132	49	128	0	0
9	103	4280	350	843	49	45
10	64	2126	460	1089	38	18

N/A = Data not available

Equivalent Industry Group 373

Regions	Establishments with 10 or more employees		Establishments with 9 or fewer employees		Number of FY 2003 Inspections	
	Establishments	Employees	Establishments	Employees	Total	Programmed
1	75	2549	333	859	22	7
2	55	3214	140	360	3	1
3	80	4690	182	466	57	37
4	356	21927	912	2546	36	27
5	94	13278	281	698	9	3
6	206	13288	439	1094	25	7
7	27	3286	47	125	4	3
8	5	132	49	128	0	0
9	103	4280	350	843	52	48
10	64	2126	460	1089	41	22

Establishment and employment counts come from Dunn & Bradstreet, June 2003.

Inspection data from IMIS database.

Inspection and establishment counts include only Federal Area Office inspections and establishments in Federal OSHA states.

Note: OSHA Region 8 data primarily represents boat building/repair.

National Summary by Region

FY 2003 Federal OSHA Inspection Data SIC 373

Federal Data Only	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
Total Inspections	22	3	57	36	9	25	4	0	52	41	249
Safety	12	2	29	20	6	20	2	0	33	20	144
Health	10	1	28	16	3	5	2	0	19	21	105
Inspections By Type											
Unprogrammed											
Accidents	15	2	20	9	6	18	1	0	4	19	94
Complaints	0	0	1	2	1	5	0	0	2	0	11
Referrals	10	0	15	7	5	8	0	0	0	16	61
Monitoring	5	1	2	0	0	1	0	0	0	3	12
Variance	0	0	0	0	0	0	0	0	0	0	0
Follow-Up	0	0	0	0	0	0	0	0	0	0	0
Unprog. Related	0	0	1	0	0	1	1	0	0	0	2
Other	0	1	2	0	0	3	0	0	2	0	8
	0	0	0	0	0	0	0	0	0	0	0
Programmed											
Planned	7	1	37	27	3	7	3	0	48	22	155
Prog. Related	7	1	34	26	3	7	3	0	43	20	144
Other	0	0	3	1	0	0	0	0	5	2	11
	0	0	0	0	0	0	0	0	0	0	0

Source: IMIS Database

Top 10 Violations Cited

Standard	#Cited	#Insp	Description
1910.134	146	51	Respiratory Protection
1910.1200	73	39	Hazard Communication
1910.305	57	30	Electrical, Wiring Methods, Comp' & Equip'
1910.212	41	34	Machines, General Requirements
1910.213	36	18	Woodworking Machinery Requirements
1910.303	36	23	Electrical Systems Design, General Rqmts
1910.215	30	25	Abrasive Wheel Machinery
1915.73	29	25	Guarding of Deck Openings & Edges
1910.178	28	19	Powered Industrial Trucks
1910.219	25	13	Mechanical Power-Transmission Apparatus

Source: IMIS Database – FY 2003 (Federal Only)

Average Number of Employees per Establishment: Acceptable data not available.

Percent small establishments: 66.2%

Some Potential Hazards and Their Sources

Hazard	Source
Respiratory hazards	Painting, asbestos, welding, cleaning, and torch cutting, etc.
Noise	Chipping, grinding, powered equipment such as air compressors and generators
Electrical hazards	Exposure to energized electrical components in wet or damp locations
Struck-by	Overhead loads on cranes, materials handling equipment
Falls	Unguarded openings and edges on decks, scaffolding
Confined spaces	Double-bottom tanks, wing tanks, fuel tanks, ballast tanks, and cofferdams

Average Case and Demographic Characteristics

Average cases per year, 1995 - 2000		8,031
Demographics of worker	Sex	88.1% men
	Age	33.0% ages 35-44 26.3% ages 25-34 20.6% ages 45-54
	Length of service with employer	30.2% more than 5 years 26.5% less than 1 year 26.1% 1-5 years
	Race/ethnic origin	50.8% white non-Hispanic 12.8% black non-Hispanic 5.1% Hispanic of any race
Characteristics of injury/illness	Days away from work	49.1% 1-5 days 28.8% 6-30 days 21.8% 31 or more days
	Nature of injury/illness	43.1% sprains/strains 19.8% "all other" natures 12.2% bruises/contusions
	Part of body affected	24.0% legs/knees/feet/toes 22.4% back 19.3% arms/wrists/hands/fingers 11.9% head
	Source of injury/illness	23.5% parts/materials 21.2% worker motion/position 15.7% "all other" sources 13.6% floors/ground surfaces
	Event or exposure	20.9% overexertion 17.3% "all other" events/exposure 14.0% struck by object

Source: OSHA Office of Statistical Analysis compilation of BLS data

Note: The percentages on this table do not sum to 100%. Only the most frequently coded characteristics are listed. The "All Other" category should not be interpreted as being all inclusive of the categories not listed above.

2001 BLS Industry Data for SIC 3730 – SHIP AND BOAT BUILDING AND REPAIRING

All Reported Cases	5766	
Nature of Illness or Injury	Number	% Total
Sprains, Strains	2516	43.64
Fractures	316	5.48
Cuts, Punctures	416	7.21
Bruises	680	11.79
Heat Burns	44	0.76
Chemical Burns	35	0.61
Amputations	36	0.62
Carpal Tunnel	83	1.44
Tendonitis	50	0.87
Mult Trauma Total	87	1.51
Mult Trauma With Fracture	0	0.00
Mult Trauma With Sprain	29	0.50
Back Pain Total	257	4.46
Back Pain Hurt Back Only	103	1.79
All Other	1245	21.59
Part of Body Affected	Number	% Total
Head Total	561	9.73
Eyes	413	7.16
Neck	146	2.53
Trunk Total	2071	35.92
Trunk Back	1196	20.74
Trunk Shoulder	390	6.76
Upper Extremities Total	1167	20.24
Upper Extremities Finger	413	7.16
Upper Extremities Hand	189	3.28
Upper Extremities Wrist	283	4.91
Lower Extremities Total	1397	24.23
Lower Extremities Knee	700	12.14
Lower Extremities Foot Toe	140	2.43
Body Systems	141	2.45
Multiple Body Parts	251	4.35
All Other Body Parts	32	0.55
Source of Injury or Illness	Number	% Total
Chem And Chem Products	73	3.00
Containers	246	4.27
Furniture And Fixtures	143	2.48
Machinery	295	5.12
Parts And Materials	1220	21.16
Worker Motion	1337	23.19
Floors Walkways	784	13.60
Handtools	479	8.31
Vehicle	426	7.39
Health Care Patient	0	0.00

All Other Sources	662	11.48
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Sex	Number	% Total
Men	5125	88.88
Women	638	11.06
Sex Not Reported	0	0.00

Age	Number	% Total
Under 14	0	0.00
14 to 15	0	0.00
16 to 19	151	2.62
20 to 24	320	5.55
25 to 34	1499	26.00
35 to 44	1777	30.82
45 to 54	1289	22.36
55 to 64	683	11.85
65 And Over	36	0.62
Not Reported	0	0.00

Race	Number	% Total
White Non Hispanic	2809	48.72
Black Non Hispanic	993	17.22
Hispanic	638	11.06
Asian Or Pacific Islander	137	2.38
American Indian	17	0.29
Race Not Reported	1172	20.33

Length of Service	Number	% Total
Less Than 3 Months	571	9.90
3 to 11 Months	900	15.61
1 to 5 years	1682	29.17
More Than 5 Years	1947	33.77
Service Not Reported	665	11.53

Days away from work	Number	% Total
1 Day	1251	21.70
2 Days	679	11.78
3 to 5 Days	852	14.78
6 to 10 Days	696	12.07
11 to 20 Days	513	8.90
21 to 30 Days	408	7.08
31 Days Or More	1367	23.71
Median Days Away	6	N/A

Event/Exposure Leading to Injury	Number	% Total
Total Contact With Objects	1674	29.03
Struck By Object	750	13.01
Struck Against Object	583	10.11
Caught In Object	154	2.67
Fall to Lower Level	342	5.93
Fall On Same Level	577	10.01
Slips Or Trips	224	3.88

Overexertion Total	1192	20.67
Overexertion In Lifting	571	9.90
Repetitive Motion	308	5.34
Exposure to Harmful Substance	410	7.11
Transportation Accidents	67	1.16
Fires And Explosions	20	0.35

Event/Exposure Leading to Injury	Number	% Total
Total Assaults - Violent Acts	36	0.62
Assaults By Person	19	0.33
All Other Assaults	17	0.29
All Other Events	919	15.94

Photo Credits

- 1) Ship under construction – OSHA Region IX
- 2) Man cleaning tank on ship – OSHA Region IX
- 3) Man grinding deck of ship – OSHA Region IX