



Plant Maintenance Resource Center

2005 Maintenance Salary Survey Results

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Overview

The seventh annual survey of salaries in the Maintenance sector was conducted on the Plant Maintenance Resource Center website between June and July 2005. This salary survey is a regular, annual event. Results of previous Salary surveys are available at the following locations:

1999 Salary survey results	www.plant-maintenance.com/articles/salariesurvey99.shtml
2000 Salary Survey results	www.plant-maintenance.com/articles/salariesurvey00.shtml
2001 Salary Survey results	www.plant-maintenance.com/articles/salariesurvey01.shtml
2002 Salary Survey results	www.plant-maintenance.com/articles/salariesurvey02.shtml
2003 Salary Survey results	www.plant-maintenance.com/articles/salariesurvey03.pdf
2004 Salary Survey results	www.plant-maintenance.com/articles/salariesurvey04.pdf

The 2006 Maintenance Salary survey will open in mid-January 2006, so make a note to check back at the site then (if not before!).

Raw Data - Overview

Voluntary (and confidential) responses were sought to the survey, and 341 valid responses were received. This compares with 447 responses last year, but is a higher number of responses than in any other previous year. The total number of valid responses received in previous years is tabulated below:

Year	No of Valid Responses
2005	341
2004	447
2003	158
2002	180
2001	248
2000	320
1999	290

This year's survey was not as widely publicised as last year, and this may be the reason behind the lower number of responses.

Raw Data - Industries

The greatest number of responses, once again, was from individuals in the Manufacturing industries. A complete list of industries represented in the last 4 surveys is tabulated below.

Industry	2005		2004		2003		2002	
	Responses	% of Total	Responses	% of Total	Responses	% of Total	Responses	% of Total
Agriculture – Forestry and Logging	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Agriculture: Other	2	0.6%	2	0.4%	0	0.0%	0	0.0%

Industry	2005		2004		2003		2002	
	Responses	% of Total	Responses	% of Total	Responses	% of Total	Responses	% of Total
Construction: General	3	0.9%	2	0.4%	0	0.0%	0	0.0%
Manufacturing: Food, beverages, tobacco	39	11.4%	36	8.1%	14	8.9%	14	7.8%
Manufacturing: Machinery and equipment	14	4.1%	26	5.8%	14	8.9%	6	3.3%
Manufacturing: Metal products	36	10.6%	40	8.9%	19	12.0%	22	12.2%
Manufacturing: Non-metallic mineral processing	11	3.2%	6	1.3%	4	2.5%	3	1.7%
Manufacturing: Other	13	3.8%	33	7.4%	4	2.5%	28	15.6%
Manufacturing: Petroleum refining, chemicals and associated products	29	8.5%	62	13.9%	14	8.9%	26	14.4%
Manufacturing: Printing, publishing, and recorded media	6	1.8%	15	3.4%	3	1.9%	1	0.6%
Manufacturing: Textiles, clothing, footwear, leather	2	0.6%	7	1.6%	2	1.3%	2	1.1%
Manufacturing: Wood and paper products	21	6.2%	30	6.7%	15	9.5%	8	4.4%
Mining: Coal	7	2.1%	2	0.4%	3	1.9%	1	0.6%
Mining: Metal ore	15	4.4%	13	2.9%	4	2.5%	1	0.6%
Mining: Other	5	1.5%	4	0.9%	3	1.9%	2	1.1%
Mining: Services to Mining	3	0.9%	4	0.9%	0	0.0%	0	0.0%
Oil and Gas: Oil and gas extraction	13	3.8%	22	4.9%	3	1.9%	6	3.3%
Other	13	3.8%	7	1.6%	4	2.5%	3	1.7%
Services: Business Services/Consulting	4	1.2%	15	3.4%	5	3.2%	9	5.0%
Services: Contract Maintenance/Repairs	11	3.2%	21	4.7%	7	4.4%	5	2.8%
Services: Defence	4	1.2%	1	0.2%	4	2.5%	1	0.6%
Services: Education/Academia	4	1.2%	15	3.4%	4	2.5%	3	1.7%
Services: Healthcare	8	2.3%	5	1.1%	4	2.5%	5	2.8%
Services: Other	8	2.3%	11	2.5%	2	1.3%	5	2.8%
Services: Property services/Building Maintenance	11	3.2%	23	5.1%	8	5.1%	9	5.0%
Services: Research & Development	3	0.9%	1	0.2%	4	2.5%	1	0.6%
Services: Software Development/Sales	3	0.9%	4	0.9%	0	0.0%	1	0.6%
Services: Telecommunications	1	0.3%	3	0.7%	0	0.0%	1	0.6%
Services: Transport	8	2.3%	5	1.1%	1	0.6%	3	1.7%
Trade: Retail	7	2.1%	4	0.9%	0	0.0%	4	2.2%
Trade: Wholesale	1	0.3%	1	0.2%	1	0.6%	3	1.7%
Utilities: Electricity Generation	20	5.9%	15	3.4%	8	5.1%	6	3.3%
Utilities: Electricity Transmission and Distribution	3	0.9%	1	0.2%	2	1.3%	1	0.6%
Utilities: Gas supply	3	0.9%	5	1.1%	0	0.0%	0	0.0%
Utilities: Water, sewerage, drainage	10	2.9%	4	0.9%	2	1.3%	0	0.0%

Raw Data - Countries

Slightly less than half of the responses received were from the USA. The next most represented country was Australia followed by Canada, India, Indonesia, United Kingdom, South Africa, Malaysia and New Zealand as the countries with the next greatest number of responses. Responses were received from 43 countries.

Country	2005		2004		2003		2002	
	Responses	% of Total	Responses	% of Total	Responses	% of Total	Responses	% of Total
United States	166	48.7%	246	55.0%	79	50.0%	92	51.1%
Australia	28	8.2%	44	9.8%	21	13.3%	20	11.1%
Canada	20	5.9%	31	6.9%	5	3.2%	11	6.1%
Other	17	5.0%	9	2.0%	7	4.4%	8	4.4%
India	13	3.8%	11	2.5%	5	3.2%	2	1.1%
Indonesia	9	2.6%	6	1.3%	1	0.6%	1	0.6%
United Kingdom	7	2.1%	18	4.0%	5	3.2%	14	7.8%
South Africa	7	2.1%	10	2.2%	3	1.9%	5	2.8%
Malaysia	6	1.8%	4	0.9%			2	1.1%
New Zealand	6	1.8%	3	0.7%	2	1.3%		
France	5	1.5%	5	1.1%	5	3.2%	3	1.7%
Netherlands	5	1.5%	3	0.7%	1	0.6%	2	1.1%
Belgium	4	1.2%	4	0.9%				
Chile	4	1.2%			1	0.6%	1	0.6%
Romania	3	0.9%	3	0.7%	1	0.6%		
Brazil	3	0.9%	3	0.7%			1	0.6%
Philippines	3	0.9%	2	0.4%	1	0.6%		
Egypt	2	0.6%	3	0.7%	1	0.6%		
Mexico	2	0.6%	3	0.7%				
Singapore	2	0.6%	2	0.4%	1	0.6%	1	0.6%
Zambia	2	0.6%	2	0.4%				
Thailand	2	0.6%	1	0.2%				
Spain	2	0.6%					1	0.6%
Finland	2	0.6%						
Botswana	2	0.6%						
Saudi Arabia	1	0.3%	5	1.1%	1	0.6%	2	1.1%
Germany	1	0.3%	3	0.7%			1	0.4%
Sweden	1	0.3%	2	0.4%	1	0.6%		
Venezuela	1	0.3%	2	0.4%				
Colombia	1	0.3%	1	0.2%	3	1.9%	1	0.6%
Ireland	1	0.3%	1	0.2%	1	0.6%		
Italy	1	0.3%	1	0.2%	1	0.6%		
Israel	1	0.3%	1	0.2%			2	1.1%
Pakistan	1	0.3%	1	0.2%				
Nigeria	1	0.3%	1	0.2%				
United Arab Emirates	1	0.3%					1	0.6%
Hungary	1	0.3%					1	0.6%
Mozambique	1	0.3%						

Country	2005		2004		2003		2002	
	Responses	% of Total	Responses	% of Total	Responses	% of Total	Responses	% of Total
Libya	1	0.3%						
Lesotho	1	0.3%						
Jamaica	1	0.3%						
Greece	1	0.3%						
El Salvador	1	0.3%						
Czech Republic	1	0.3%						
China (PRC)			2	0.4%				
Kuwait			2	0.4%			2	1.1%
Zimbabwe			1	0.2%	1	0.6%		
Dominican Republic			1	0.2%	1	0.6%		
Russia			1	0.2%			1	0.6%
Taiwan			1	0.2%				
Slovak Republic			1	0.2%				
Serbia			1	0.2%				
Tanzania			1	0.2%				
Argentina			1	0.2%				
Ethiopia			1	0.2%				
Oman			1	0.2%				
Peru			1	0.2%				
Trinidad			1	0.2%				
Qatar					2	1.3%		
Denmark					1	0.6%	1	0.6%
Iran					1	0.6%		
Norway					1	0.6%		
Antarctica					1	0.6%		
Northern Mariana Islands					1	0.6%		
Turkey							1	0.6%
Korea							1	0.6%
Tunisia							1	0.6%
Virgin Islands							1	0.6%
Puerto Rico								

Raw Data - States

For the responses received from US participants, the States with the largest number of respondents were Texas, Ohio, Tennessee, Georgia, and Virginia. This is somewhat consistent with the results of previous surveys, except for the states of Ohio and California, with these being down on last year.

State	2005		2004		2003		2002	
	Responses	% of Total	Responses	% of Total	Responses	% of Total	Responses	% of Total
Texas	18	10.8%	17	6.9%	5	6.3%	9	9.6%
Ohio	11	6.6%	25	10.2%	7	8.9%	9	9.6%
Tennessee	11	6.6%	8	3.3%	4	5.1%	4	4.3%
Georgia	9	5.4%	10	4.1%	3	3.8%	3	3.2%

State	2005		2004		2003		2002	
	Responses	% of Total	Responses	% of Total	Responses	% of Total	Responses	% of Total
Virginia	8	4.8%	3	1.2%	4	5.1%		
California	7	4.2%	17	6.9%	4	5.1%	7	7.4%
Kentucky	7	4.2%	9	3.7%	3	3.8%		
Pennsylvania	7	4.2%	8	3.3%	1	1.3%	4	4.3%
Wisconsin	7	4.2%	8	3.3%	5	6.3%	4	4.3%
Florida	6	3.6%	10	4.1%	1	1.3%	3	3.2%
South Carolina	6	3.6%	5	2.0%			2	2.1%
Idaho	5	3.0%	1	0.4%	1	1.3%		
New York	5	3.0%	10	4.1%	4	5.1%		
Arizona	4	2.4%	5	2.0%	2	2.5%	1	1.1%
Illinois	4	2.4%	8	3.3%	5	6.3%	4	4.3%
Michigan	4	2.4%	8	3.3%	2	2.5%	4	4.3%
Minnesota	4	2.4%	6	2.4%	5	6.3%		
Indiana	3	1.8%	11	4.5%	4	5.1%	2	2.1%
Missouri	3	1.8%	5	2.0%	2	2.5%		
New Jersey	3	1.8%	2	0.8%	2	2.5%	4	4.3%
North Carolina	3	1.8%	8	3.3%	4	5.1%	5	5.3%
Oregon	3	1.8%	3	1.2%	1	1.3%	4	4.3%
Vermont	3	1.8%						
Colorado	2	1.2%	3	1.2%			2	2.1%
Iowa	2	1.2%					3	3.2%
Massachusetts	2	1.2%	6	2.4%	3	3.8%	1	1.1%
Mississippi	2	1.2%	1	0.4%				
Oklahoma	2	1.2%	3	1.2%	2	2.5%		
Utah	2	1.2%	1	0.4%	1	1.3%	1	1.1%
Washington	2	1.2%	7	2.8%			2	2.1%
Wyoming	2	1.2%	2	0.8%	1	1.3%	1	1.1%
Alaska	1	0.6%	4	1.6%	1	1.3%	1	1.1%
Arkansas	1	0.6%	1	0.4%			1	1.1%
Connecticut	1	0.6%	5	2.0%	1	1.3%		
Delaware	1	0.6%						
Kansas	1	0.6%	5	2.0%				
Louisiana	1	0.6%	5	2.0%	1	1.3%	2	2.1%
Montana	1	0.6%	1	0.4%			2	2.1%
Nebraska	1	0.6%	1	0.4%			3	3.2%
Nevada	1	0.6%	1	0.4%				
Rhode Island	1	0.6%						
South Dakota	1	0.6%						
New Hampshire			1	0.4%	1	1.3%	2	2.1%
Alabama			6	2.4%	3	3.8%	1	1.1%
Hawaii								
Maine								
Maryland			2	0.8%				
New Mexico			2	0.8%				
Non-USA								
North Dakota								
West Virginia			3	1.2%			3	3.2%

Raw Data - Job Positions

As in previous years, the positions with the greatest representation in the survey were Maintenance Managers/Superintendents, followed equally in second place by Plant/Maintenance Engineers, Maintenance Foremen/Supervisors and Maintenance Technicians. Proportionally, there were fewer responses from Maintenance Crafts/Tradespersons in this year's survey.

Position	2005		2004		2003		2002	
	Responses	% of Total	Responses	% of Total	Responses	% of Total	Responses	% of Total
Maintenance Manager/Superintendent	79	23.2%	108	24.2%	46	29.1%	42	23.3%
Plant/Maintenance Engineer	50	14.7%	63	14.1%	33	20.9%	26	14.4%
Maintenance Foreman/Supervisor	48	14.1%	58	13.0%	14	8.9%	21	11.7%
Maintenance Technician	45	13.2%	56	12.5%	22	13.9%	21	11.7%
Maintenance Planner	24	7.0%	30	6.7%	17	10.8%	16	8.9%
Other	22	6.5%	26	5.8%	2	1.3%	8	4.4%
Maintenance Crafts/Tradesperson	16	4.7%	25	5.6%	8	5.1%	12	6.7%
Consulting Engineer	11	3.2%	15	3.4%			8	4.4%
Process/Industrial Engineer	5	1.5%	8	1.8%	2	1.3%	1	0.6%
Consulting Manager	5	1.5%	1	0.2%	1	0.6%	2	1.1%
Maintenance Accountant	4	1.2%	3	0.7%	1	0.6%	2	1.1%
CEO/Managing Director	3	0.9%	5	1.1%	2	1.3%	2	1.1%
Reliability Engineer	3	0.9%	3	0.7%	2	1.3%	2	1.1%
Predictive Maintenance Specialist	3	0.9%						
Management Consultant	2	0.6%	7	1.6%	1	0.6%	3	1.7%
Maintenance Contract Officer	2	0.6%	2	0.4%	1	0.6%		
Product Support Technician	2	0.6%	1	0.2%				
Facility Manager	2	0.6%						
Computer/IT Consultant	1	0.3%	6	1.3%	1	0.6%	2	1.1%
Maintenance Clerk	1	0.3%	5	1.1%			1	0.6%
Marketing/Business Development/Sales Manager	1	0.3%	5	1.1%				
Product Support Professional	1	0.3%	4	0.9%	1	0.6%	1	0.6%
Maintenance Contract Manager	1	0.3%	4	0.9%			6	3.3%
Operations/Plant Manager	1	0.3%	3	0.7%			1	0.6%
Student	1	0.3%	3	0.7%				
Research Technician	1	0.3%	2	0.4%				
Maintenance Systems Specialist	1	0.3%						
Plant Inspector	1	0.3%						
Marketing Officer/Business Development Officer/Salesperson	1	0.3%						
Projects Manager	1	0.3%						
Reliability Manager	1	0.3%						
Engineering Assistant	1	0.3%						
Reliability Technician	1	0.3%						
Teacher/Academic			2	0.4%				

Software Support Manager				1	0.2%				
Product Support Manager				1	0.2%				
Design Engineer						1	0.6%	3	1.7%
Research Professional						1	0.6%		
Research Manager						1	0.6%		

Raw Data - Educational Levels

The distribution of educational levels was similar to previous years, with a slightly greater proportional representation from 'High School' educational levels. As in previous years, participants with 'Certificate/Diploma/Associate Degree' and 'Undergraduate/College Degree' educational levels dominate the survey results with a combined representation of 53%.

Education	2005		2004		2003		2002	
	Responses	% of Total	Responses	% of Total	Responses	% of Total	Responses	% of Total
High School	61	17.9%	68	15.2%	24	15.2%	21	11.7%
Formal Trade Training	52	15.2%	69	15.4%	22	13.9%	27	15.0%
Certificate/Diploma/Associate Degree	96	28.2%	126	28.2%	52	32.9%	60	33.3%
Undergraduate/College (Bachelors) degree	86	25.2%	123	27.5%	24	21.5%	52	28.9%
Post Graduate (Masters) degree	43	12.6%	59	13.2%	24	15.2%	20	11.1%
Post Graduate (Doctorate) degree	3	0.9%	2	0.4%	2	1.3%		

Raw Data - Work Experience

A wide range of work experience was represented, with the distribution of experience being similar to previous years. What is noticeable however is a decline in representation from those participants with 25yrs experience or more. This group in previous years typically represented a fifth of participants at 20%, but in 2005 represented less than 15%.

Experience	2005		2004		2003		2002	
	Responses	% of Total	Responses	% of Total	Responses	% of Total	Responses	% of Total
0 to 5	68	19.9%	76	17.0%	23	14.6%	27	15.0%
5 to 10	55	16.1%	72	16.1%	25	15.8%	27	15.0%
10 to 15	66	19.4%	74	16.6%	26	16.5%	37	20.6%
15 to 20	56	16.4%	74	16.6%	22	13.9%	32	17.8%
20 to 25	46	13.5%	65	14.5%	29	18.4%	33	18.3%
25 to 30	29	8.5%	53	11.9%	22	13.9%	20	11.1%
more than 30	21	6.2%	33	7.4%	11	7.0%	4	2.2%

Raw Data - Salaries

The total annual earnings, inclusive of all benefits, displayed a similar distribution to last year, with the only significant difference being a movement away from the \$60-70,000 bands i.e. from 18% to 12%. A general trend over the years has been greater participation in the survey from participants in the \$0-20,000 band, with responses more than doubled in proportion, but also increased by five-fold in absolute terms. A surprising observation is that overall average salary has remained unchanged from 2004 to 2005.

Salary Band (US\$)	2005		2004		2003		2002	
	Responses	% of Total	Responses	% of Total	Responses	% of Total	Responses	% of Total
0-20,000	49	14.4%	53	11.9%	14	8.9%	10	5.6%
20,001-25,000	8	2.3%	9	2.0%	9	5.7%	3	1.7%
25,001-30,000	7	2.1%	13	2.9%	2	1.3%	12	6.7%
30,001-35,000	17	5.0%	22	4.9%	9	5.7%	12	6.7%
35,001-40,000	15	4.4%	28	6.3%	15	9.5%	12	6.7%
40,001-45,000	20	5.9%	29	6.5%	11	7.0%	18	10.0%
45,001-50,000	25	7.3%	35	7.8%	21	13.3%	22	12.2%
50,001-55,000	26	7.6%	31	6.9%	13	8.2%	15	8.3%
55,001-60,000	38	11.1%	36	8.1%	14	8.9%	11	6.1%
60,001-65,000	20	5.9%	43	9.6%	8	5.1%	11	6.1%
65,001-70,000	22	6.5%	37	8.3%	5	3.2%	12	6.7%
70,001-75,000	15	4.4%	19	4.3%	8	5.1%	10	5.6%
75,001-80,000	18	5.3%	16	3.6%	6	3.8%	11	6.1%
80,001-85,000	10	2.9%	11	2.5%	6	3.8%	6	3.3%
85,001-90,000	13	3.8%	9	2.0%	2	1.3%	2	1.1%
90,001-95,000	5	1.5%	14	3.1%	4	2.5%	2	1.1%
95,001-100,000	7	2.1%	8	1.8%	3	1.9%	1	0.6%
100,001-110,000	2	0.6%	9	2.0%	2	1.3%	4	1.6%
110,001-120,000	9	2.6%	11	2.5%	0	0.0%	2	1.1%
120,001-130,000	5	1.5%	3	0.7%	3	1.9%	0	0.0%
130,001-140,000	3	0.9%	3	0.7%	1	0.6%	1	0.6%
140,001-150,000	2	0.6%	4	0.9%	1	0.6%	0	0.0%
150,001-175,000	4	1.2%	3	0.7%	0	0.0%	0	0.0%
175,001-200,000	1	0.3%	0	0.0%	1	0.6%	1	0.6%
more than 200,000	0	0.0%	1	0.2%	0	0.0%	1	0.6%

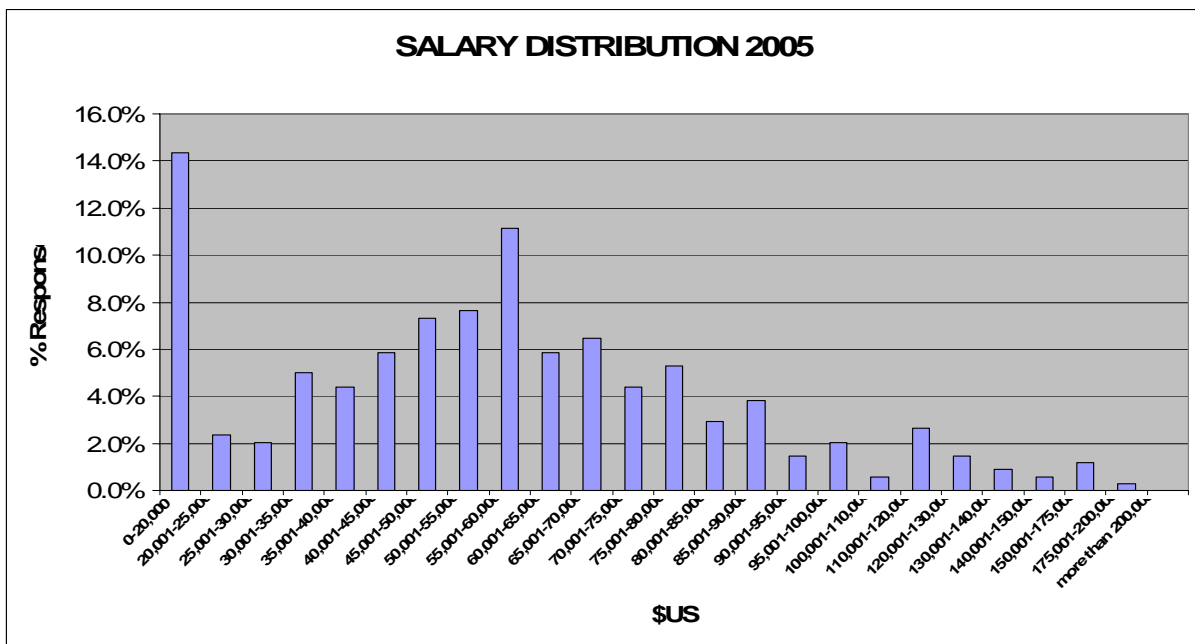


Fig. 1

The overall average salary in 2005 was \$56,576 compared to that of \$56,577 and therefore is essentially the same. This represents a leveling out from previous years when overall salaries have clearly increased. This observation is also supported by examining the median salary which represents the 50% percentile. This has also leveled out at \$57,500, but within a slightly greater distribution. The bottom 25% percentile has remained unchanged, whilst the 75% percentile has increased, suggesting that overall salary distributions are widening ref. Fig.2.

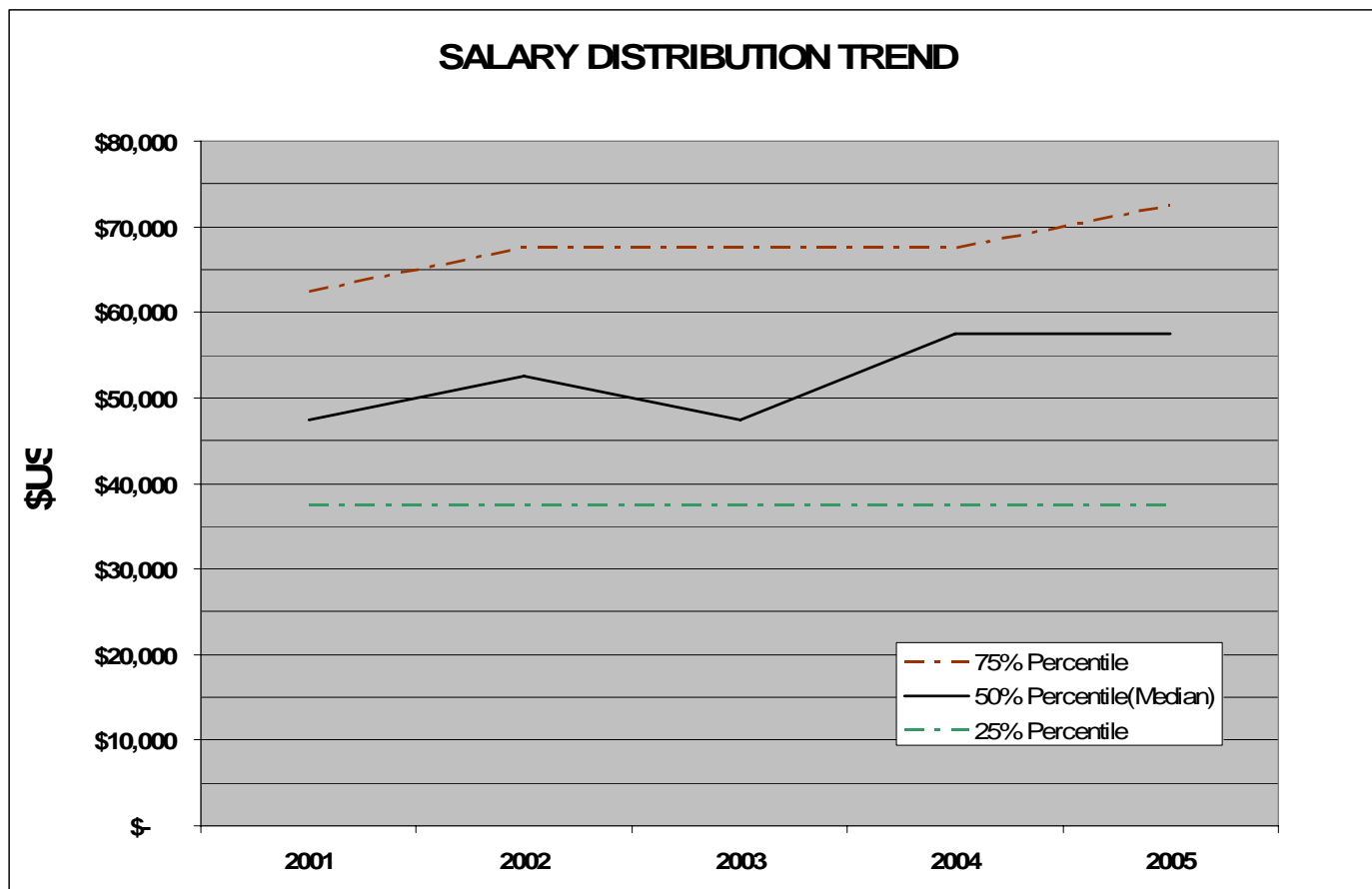


Fig. 2

Overall Results

The median salary for the 2005 survey was \$US 57,500 lying within the band US\$55,001-\$60,000. This represents a leveling out from previous years. Assuming the average salary for each band is the midpoint of each band, the mean salary in 2005 is US\$56,576 which is essentially unchanged from the previous year. Comparisons with previous years are shown in the following table.

Year	Median Salary Band	Approximate Mean Salary
2005	US\$55,001-\$60,000	US\$56,576
2004	US\$55,001-\$60,000	US\$56,577
2003	US\$45,001-\$50,000	US\$53,623
2002	US\$50,001-\$55,000	US\$54,917
2001	US\$45,001-\$50,000	US\$51,290
2000	US\$45,001-\$50,000	US\$52,523
1999	US\$50,001-\$55,000	US\$53,521

The changing mix of respondents, plus variations in currency exchange rates could explain some of the variations in the above table, rather than any underlying trend in salary movements.

Salary by Industry

An analysis of salaries by industry (for those industries with 5 or more responses) indicated that the industry paying the highest salaries in 2005 was Oil and Gas - Oil and Gas Extraction. This industry has typically been among the highest paying in previous surveys. After two years of salary growth Utilities - Electricity Generation has stabilized, whereas the Utilities group as a whole continues to grow. As a group the Manufacturing industry has been relatively stagnant in terms of salary growth, except for one manufacturing sector which has shown rapid growth, namely Non-Metallic Mineral Processing, mostly represented by the Cement Industry though this was not a contributing factor.

Industry	2005	2004	2003	2002	2001
Oil and Gas - Oil and gas extraction	\$83,846	\$88,636		\$62,500	\$50,313
Mining - Coal	\$83,571				
Mining - Metal ore	\$73,333	\$80,385			
Utilities - Electricity Generation	\$63,375	\$65,167	\$56,250	\$49,167	\$52,692
Manufacturing - Non - metallic mineral processing	\$56,364	\$34,583			
Manufacturing - Wood and paper products	\$56,310	\$52,917	\$56,167	\$60,625	\$52,500
Manufacturing - Petroleum refining, chemicals and associated products	\$56,207	\$58,145	\$56,429	\$59,519	\$55,972
Manufacturing - Machinery and equipment	\$54,643	\$46,923	\$48,929	\$76,250	\$63,393
Services - Transport	\$54,375	\$54,000			
Manufacturing - Other	\$53,846	\$56,515		\$55,000	\$50,500
Manufacturing - Food, beverages, tobacco	\$52,179	\$54,054	\$43,393	\$50,536	\$57,581
Utilities - Water, Sewage, Drainage	\$51,750				
Manufacturing - Metal products	\$51,319	\$54,000	\$49,605	\$58,182	\$48,534
Services - Other	\$49,688	\$36,591			
Other	\$48,654	\$58,705	\$58,898	\$47,446	\$46,078
Services - Healthcare	\$45,625	\$79,000		\$49,500	\$36,000
Manufacturing - Printing, publishing, and recorded media	\$45,417	\$54,500			
Services - Contract Maintenance/Repairs	\$43,408	\$42,381	\$55,357		\$44,792
Services - Property services/Building Maintenance	\$42,273	\$46,304	\$36,563	\$52,778	\$52,857
Trade - Retail	\$39,286				

Note that, for the purpose of this analysis, only industries containing 5 or more respondents were included. The overall result is shown graphically ref. Fig.3.

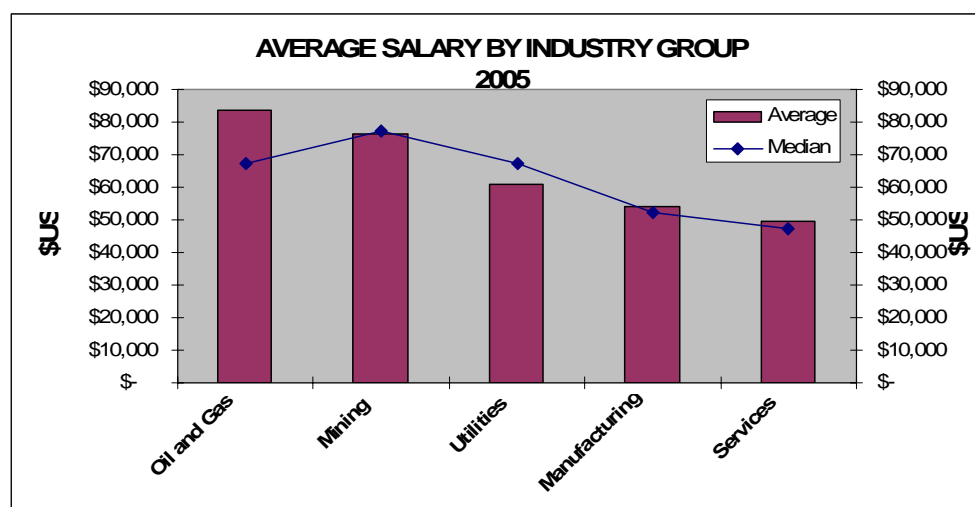


Fig. 3

As a general rule an analysis of the salary distributions using median and mean (or average) will allow a comparison which indicates skew-ness. Typically the Oil and Gas industry salary distribution shows evidence of a smaller number of higher salary positions that drive the mean up but have little effect on the median. In contrast, the Utilities group shows evidence of a smaller number of lower salary positions that drive the mean down but have little effect on the median. This suggests that the salary distribution of the Oil and Gas industry and Utilities groups are very different indeed, moreover and within the limitations of sample size appear to be in contrast. Interestingly, in comparison, the Mining industry group (as a whole) has more highly paid respondents reflected in the higher median, but overall have less average salary ref. Fig. 3. Apparently the Oil and Gas Industry has greater earning potential than the Mining Industries, but this comes with less likelihood. The reason for this is the need to cross international boundaries. This group was represented by a wide variety of nationalities with varying salaries mostly related to nationality, regardless of position or other factors ref. Fig.4. Similarly, lower paid Utilities based respondents came from lower paid countries.

It is observed that the Manufacturing and Service groups have more even distributions with more stability over time, but it may be argued that with these two groups dominating the survey responses there will nevertheless be an expectation of less variance ref. Figs. 7 & 8. An overwhelming observation was the representation of the United States within these two industry groups. Most respondents continue to come from Manufacturing industries, and the United States is one key example. Whilst salaries in the Manufacturing industries have been quite stagnant it is clear that salaries in the Service Industries have declined in the last 12 months.

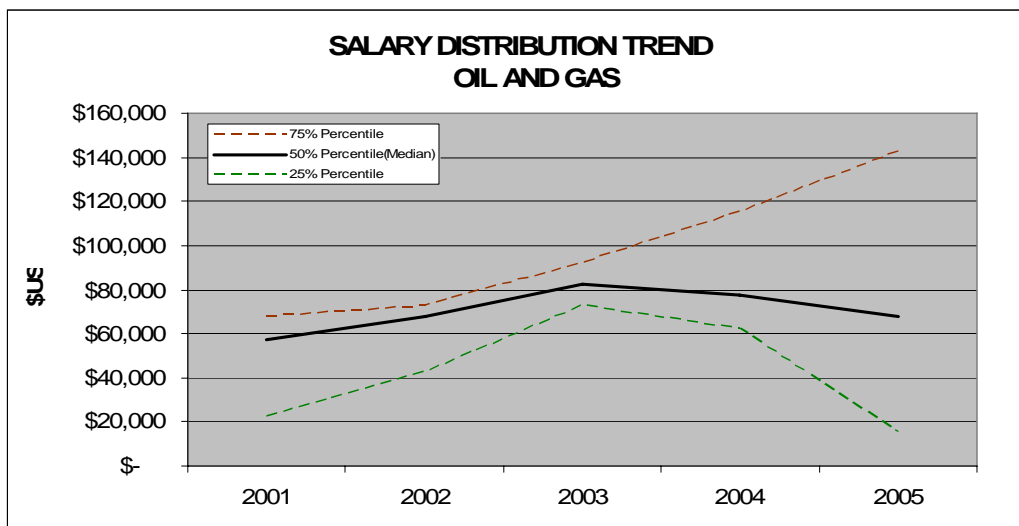


Fig. 4

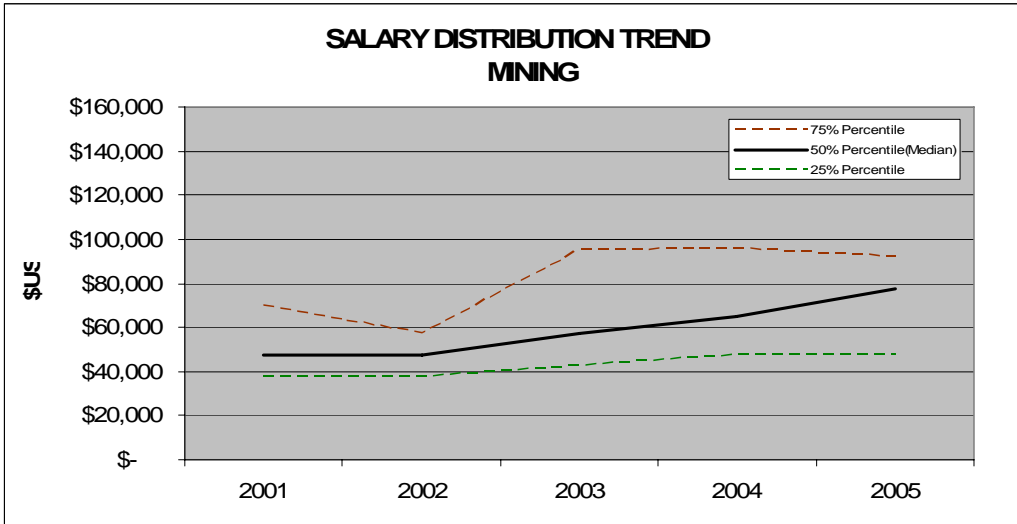


Fig. 5

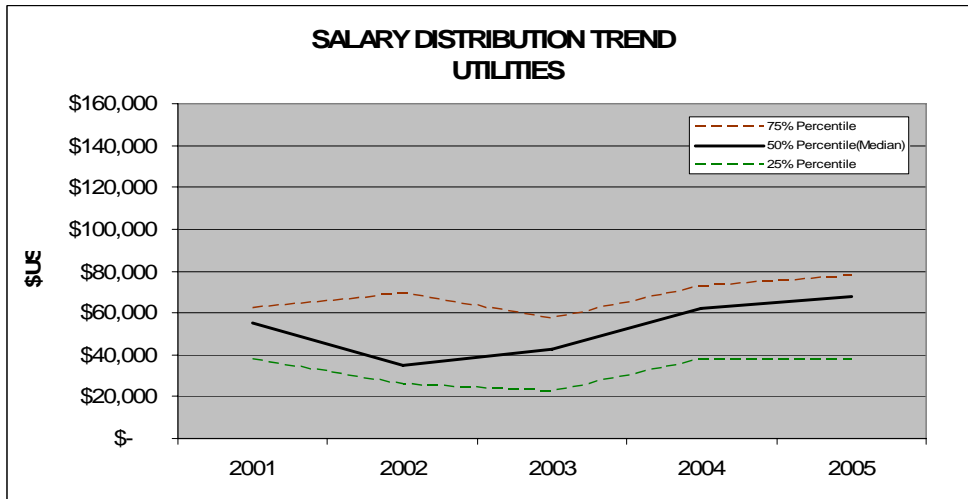


Fig. 6

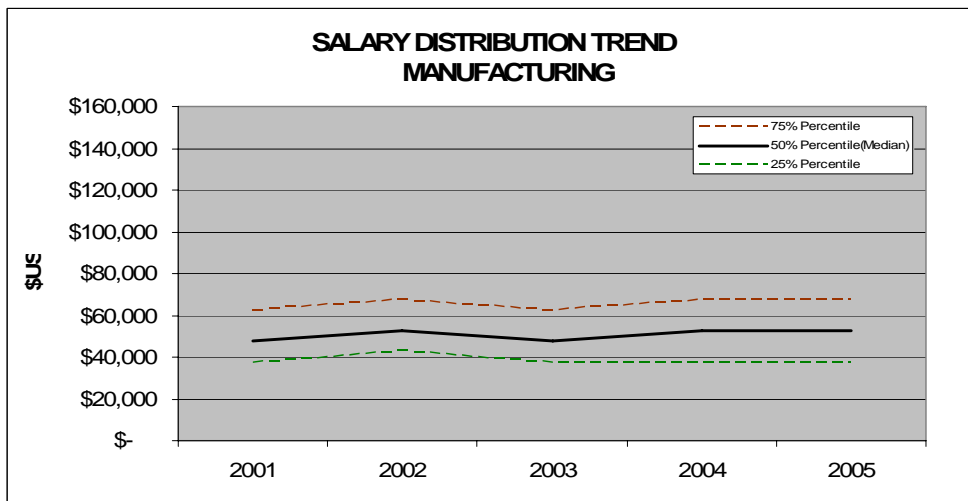


Fig. 7

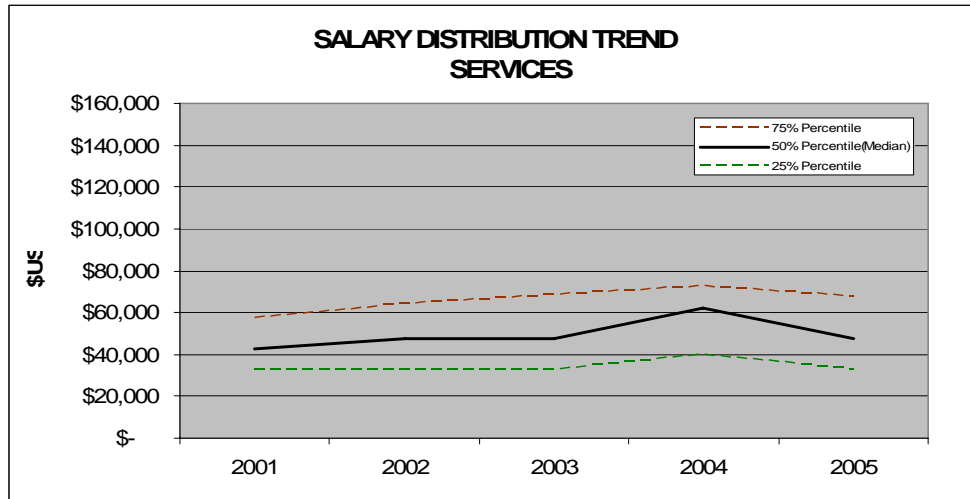


Fig. 8

Salaries by Country

Once again, only countries with 5 or more respondents were included in this analysis, which showed that the highest salaries were once again obtained in Australia, followed by Canada, the United Kingdom and the USA.

Country	2005	2004	2003	2002	2001
Australia	\$85,000	\$69,886	\$52,262	\$49,750	\$50,481
Canada	\$71,250	\$59,032	\$56,000	\$52,955	\$67,500
United Kingdom	\$67,143	\$53,889	\$47,500	\$58,929	\$31,250
United States	\$60,241	\$62,215	\$62,880	\$61,005	\$54,278
South Africa	\$56,071	\$41,250		\$28,000	
Netherlands	\$49,500				\$92,000
France	\$45,000	\$41,500	\$63,500		
New Zealand	\$44,167				
Malaysia	\$31,667	\$46,000			
India	\$29,808	\$28,409	\$10,000		
Indonesia	\$13,888	\$32,500			

Australian salaries appear to have undergone a remarkable increase, even more-so when allowance is made for a weaker Australian Dollar. This is due more to the differential mix of respondents from Australia than anything else. Almost half of Australian respondents were from the Mining industry, and a third was at Maintenance Manager/Superintendent levels. Furthermore, Australian respondents were less likely to be from the Manufacturing sector – only a third were from this sector, whereas other countries were typically represented by more than a half from this sector. This is very relevant because the Manufacturing groups are typically represented as having lower average salary. Similarly Canadian salaries have increased, as have those from the United Kingdom, again despite weaker currencies. It is difficult to make too many conclusions with so few respondents from the United Kingdom but Canada stands out as having higher overall salaries without any special causes identified other than country alone. In terms of salary ranking by country this is considered an important observation.

It is also possible that the stronger US\$ has also affected the comparisons between countries. Comparisons, year on year, between non-US countries should also be treated cautiously. For example, the following were the exchange rates in place at the midpoints of each of the last 5 surveys.

1 USD =					
Currency	2005	2004	2003	2002	2001
Australia (AUD)	1.42	1.26	1.69	1.94	1.91
Canada (CAD)	1.34	1.32	1.52	1.59	1.53
United Kingdom (GBP)	0.545	0.529	0.620	0.699	0.690
Saudi Arabia (SAR)	3.75	3.75			
France (FRF)	5.37	5.12	6.08		
South Africa (ZAR)	6.27	6.57		11.41	
Indonesia (IDR)	9208	8413			
India (INR)	45.75	45.26	47.84		

Finally, it should also be noted that tax rates will differ between countries, as will the cost of living, so a larger salary in one country does not necessarily translate to a better lifestyle.

A graphical comparison of salaries between countries, and trends over the last 5 years is illustrated in Fig.9.

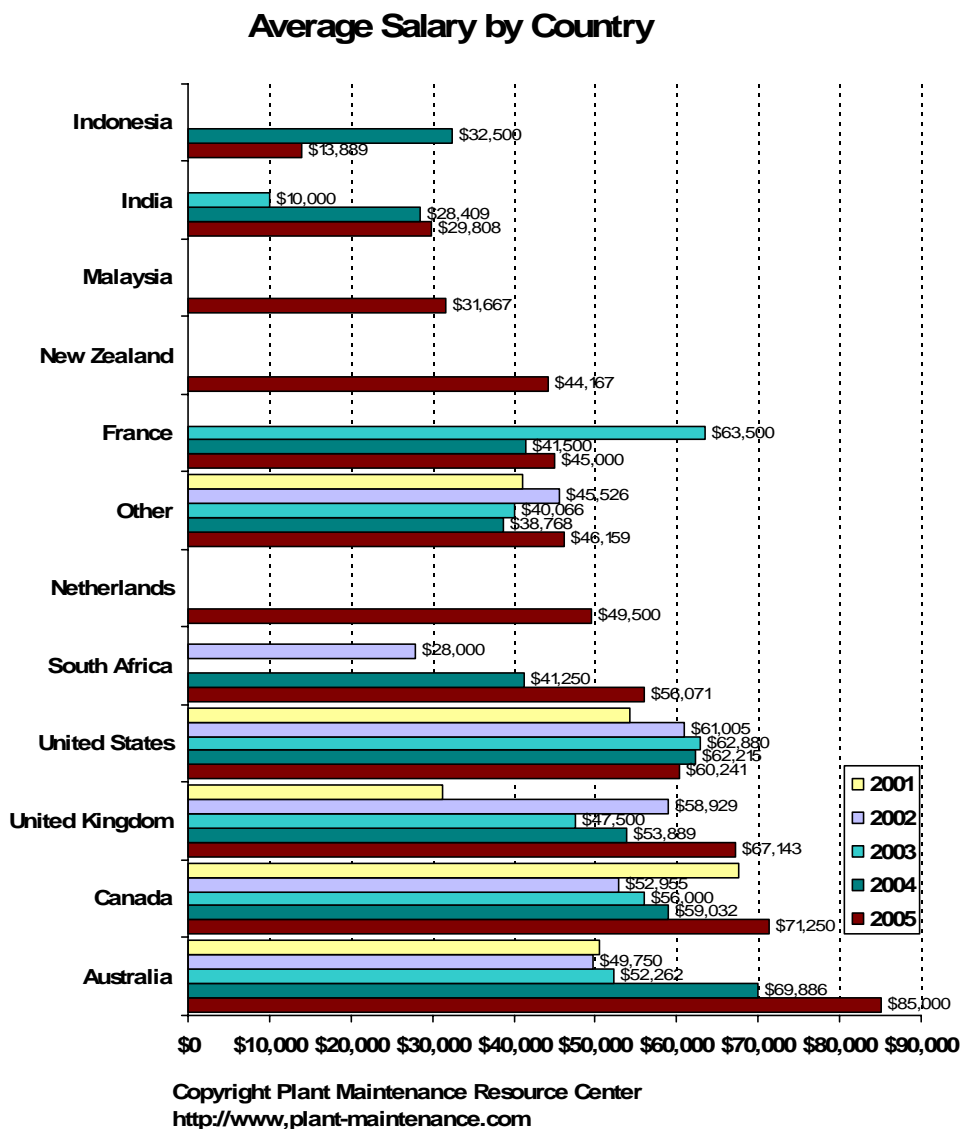


Fig. 9

Salaries by State

Average salaries are given for those states with more than 5 responses in the following table and chart. However, given the low number of results for each state, meaningful comparison between states is almost impossible.

State	2005	2004	2003	2002	2001
South Carolina	\$77,917	\$68,500			
California	\$75,714	\$65,147		\$67,857	\$59,722
Virginia	\$72,188				
Texas	\$65,833	\$74,559	\$89,500	\$65,278	\$46,667
Wisconsin	\$65,357	\$73,125	\$55,500		
Georgia	\$61,389	\$56,500			
Other	\$60,205	\$67,429	\$66,295	\$59,570	\$54,599
Tennessee	\$56,136	\$56,250			
Florida	\$55,417	\$57,500			\$52,500
Pennsylvania	\$53,214	\$64,688			\$50,000
Ohio	\$52,955	\$62,800	\$51,786	\$58,056	\$57,955
New York	\$51,500	\$59,750			
Kentucky	\$51,071	\$51,389			
Idaho	\$30,500				

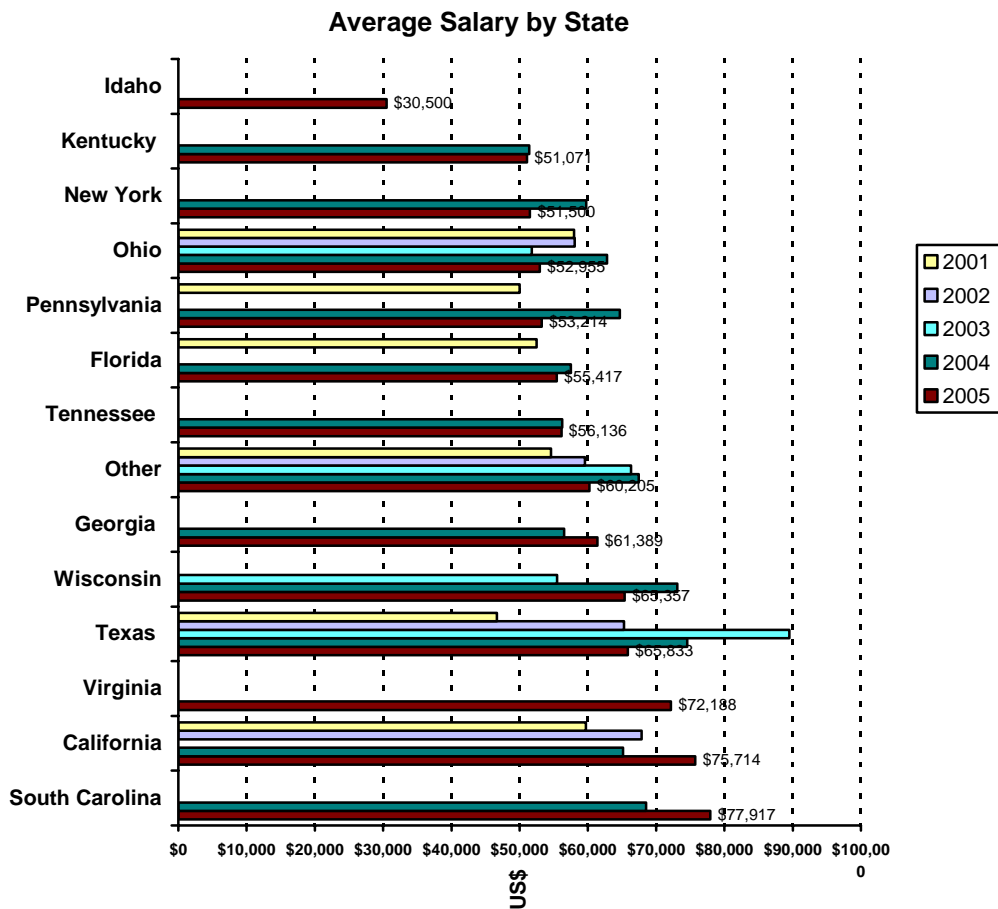


Fig. 10

Salaries by Position

As in previous analyses, only positions with more than 5 respondents were included. Consulting Engineers lead in terms of average salaries, ahead of Maintenance Managers/Superintendents with Maintenance Foremen/Supervisors closely behind. Recognizing that Management Consultants were the highest salary positions in 2004, and only failed to make the list this year being short on respondents, it is clear that senior consulting positions continue to command higher salaries.

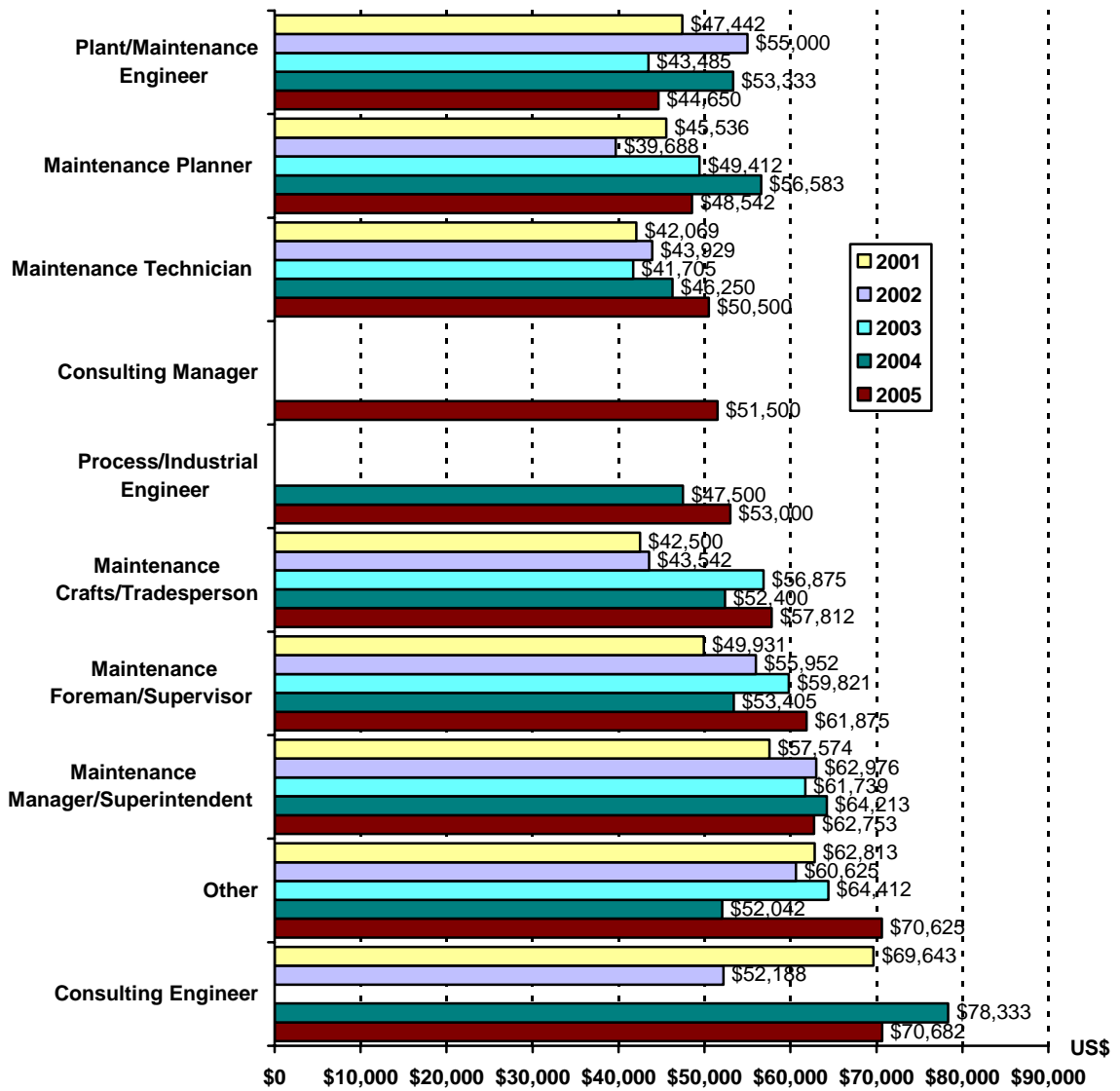
It is interesting to observe that there is little to separate Maintenance Managers/Superintendents from Maintenance Foremen/Supervisor's salaries in 2005. In fact over the five year period the difference amounts to approximately 10%. This may be explained by the fact that many Maintenance Foremen/Supervisors possibly work a shift pattern which includes allowances above a base salary. Comparisons between actual base salaries may show a greater differential between these two groups.

Maintenance Planners have again shown high salaries in this year's results, significantly more than Plant Engineers and Maintenance Engineers. In previous years, Maintenance Planners were paid less than Maintenance Crafts/Tradespeople and Supervisors, which appeared to greatly undervalue their contribution at most businesses. It now appears that there is a trend towards recognizing the contribution that good maintenance planning can make and consequently the need to attract competent staff. It is worth noting that Maintenance Planners are becoming increasingly qualified with 75% of Maintenance Planners having a Certificate/Diploma/Associate Degree or higher, and this was regardless of which country the respondent resided. Furthermore, 29% had an Undergraduate/College (Bachelors) degree, again regardless of country. The same may be said for Maintenance Technicians who have also enjoyed salary increases during the last 5 years and stand quite high in comparison with other positions in 2005.

In comparison to previous years Maintenance Crafts/Tradesperson positions have shown the greatest proportional increase. Referring to Fig.11 it is clear this group stands out, together with Maintenance Foremen/Supervisors as having achieved the greatest salary rises. But again, craft positions demonstrate the greatest proportional increase of all positions surveyed.

Position	2005	2004	2003	2002	2001
Consulting Engineer	\$70,682	\$78,333		\$52,188	\$69,643
Other	\$70,625	\$52,042	\$64,412	\$60,625	\$62,813
Maintenance Manager/Superintendent	\$62,753	\$64,213	\$61,739	\$62,976	\$57,574
Maintenance Foreman/Supervisor	\$61,875	\$53,405	\$59,821	\$55,952	\$49,931
Maintenance Crafts/Tradesperson	\$57,812	\$52,400	\$56,875	\$43,542	\$42,500
Process/Industrial Engineer	\$53,000	\$47,500			
Consulting Manager	\$51,500				
Maintenance Technician	\$50,500	\$46,250	\$41,705	\$43,929	\$42,069
Maintenance Planner	\$48,542	\$56,583	\$49,412	\$39,688	\$45,536
Plant/Maintenance Engineer	\$44,650	\$53,333	\$43,485	\$55,000	\$47,442

Average Salary by Position



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Fig. 11

Salary by Education

It would be expected that increased levels of formal educational qualifications generally lead to increased salaries. Whilst this may have been inferred from previous surveys, it is not so evident in 2005. If one ignores the Post Graduate (Doctorate) Degree results due to low number of respondents each year, it becomes even more apparent that there is only slight evidence that education, by itself, is an indicator of salary. Instead, it might be argued that, all other things being equal, education combined with experience may be a more reliable indicator of salary, and intuitively this may be a more sound comparison. Whilst it may be expected that, all other things being equal, higher education levels lead to higher salary levels, it is difficult to analyze these effects with limited sample sizes. Clearly all other things are not equal so one must exercise caution when making conclusions from these results. As an observation of more senior maintenance positions, which generally attract higher salaries, 27% were at High School or Formal Trade Training Levels, but this had negligible effect on salary, but they in turn had more experience.

Educational Level	2005	2004	2003	2002	2001
High School	\$54,139	\$49,081	\$53,542	\$50,833	\$43,919
Formal Trade Training	\$58,990	\$54,384	\$47,386	\$55,093	\$49,808
Certificate/Diploma/Associate Degree	\$56,068	\$54,365	\$53,654	\$53,750	\$45,746
Undergraduate/College (Bachelors) degree	\$58,314	\$59,431	\$55,735	\$55,433	\$61,316
Post Graduate (Masters) degree	\$53,547	\$65,847	\$60,000	\$61,125	\$47,679
Post Graduate (Doctorate) degree	\$74,167	\$77,500	\$10,000		\$92,500

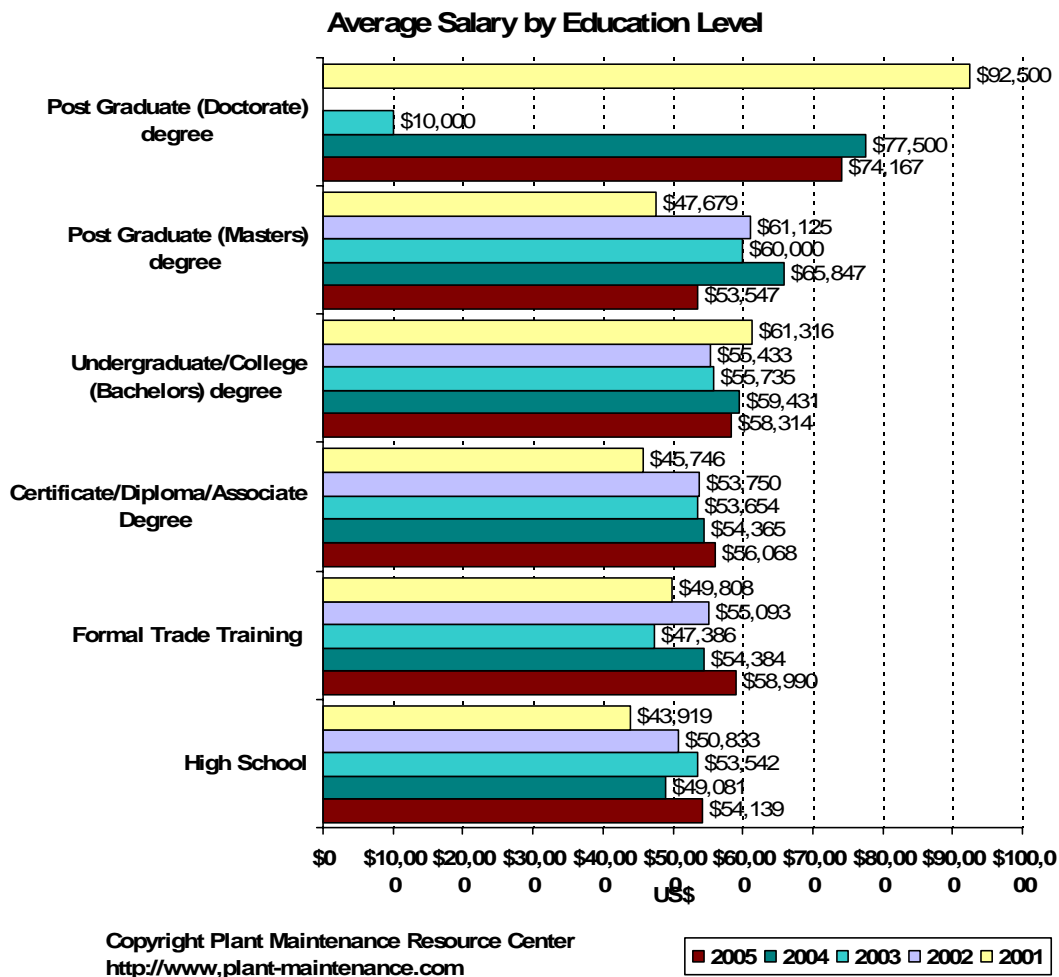


Fig. 12

Salary by Experience

Once again, this survey highlights that experience is an important factor in generating additional salary. After 5 years of survey results it is becoming increasingly clear that the first 15 years of experience represent the greatest rate of increase in salary. On average respondents demonstrated a 40% increase in salary within the first 15 years of their career with an average increase of 18% per year. However, this rate drops to an average of 5% per year for the next 10 years, thereafter increasing at a rate of 9% ref. Fig. 13.

Years Experience	2005	2004	2003	2002	2001
0 to 5	\$37,463	\$41,941	\$34,348	\$38,426	\$44,342
5 to 10	\$48,136	\$45,972	\$50,300	\$42,407	\$43,415
10 to 15	\$56,250	\$56,486	\$48,173	\$58,986	\$54,900
15 to 20	\$65,179	\$57,331	\$57,614	\$55,000	\$51,970
20 to 25	\$63,967	\$62,885	\$57,414	\$64,848	\$53,929
25 to 30	\$76,638	\$69,953	\$68,864	\$65,875	\$56,875
more than 30	\$74,762	\$78,030	\$65,909	\$75,625	\$63,750

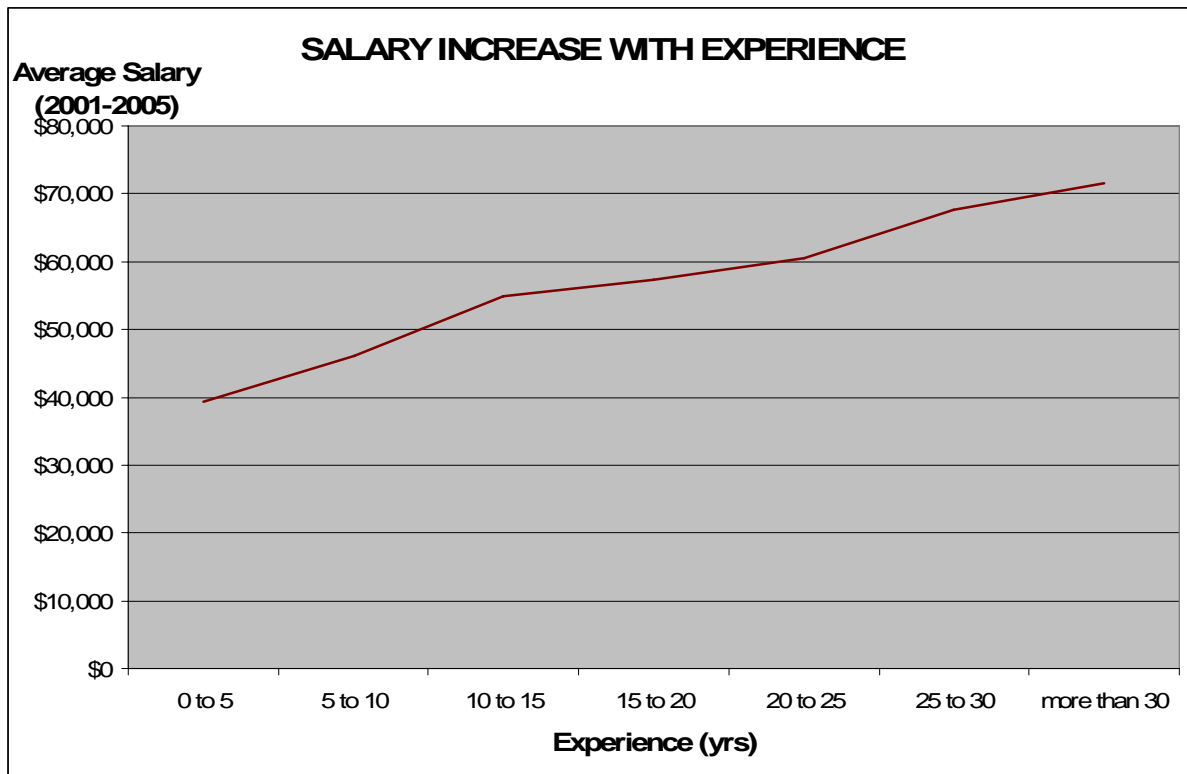


Fig. 13

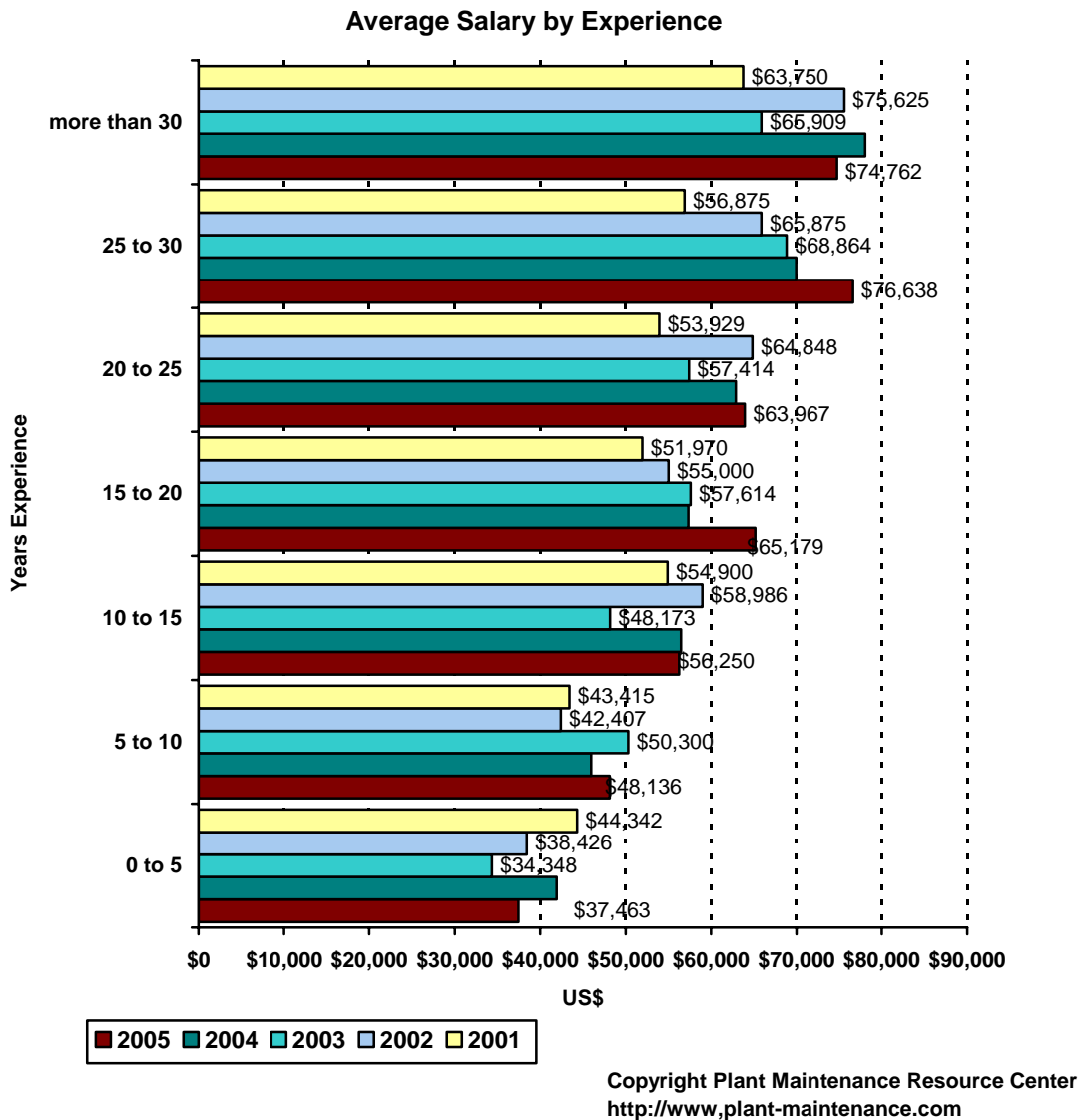


Fig. 14

Salary by Company Size

This year's results again show that medium/large companies demonstrate larger salaries than small companies. However the difference between those salaries for medium and large companies is not that significant. It appears that size is only a significant indicator of salary where small companies are concerned. Moreover this has become more pronounced in recent years suggesting smaller companies are experiencing greater cost pressures than other larger companies. A factor considered but later discounted was that smaller companies may provide less levels of management, with a bias away from senior management positions thus providing less salary overall. Salary, often being an indicator of market forces, is also entrenched in notional organizational responsibilities for budgets and personnel. Smaller companies, with smaller organizational structures with less levels of management, combined with smaller budgets may be providing less salaries for these reasons. But closer analysis of the data discounted this. There was no significant correlation between company size and the proportion of senior maintenance management positions. In fact closer examination identified company size as an indirect indicator of industry type. Many small companies reflected Trade Retail, Healthcare Services and Food Manufacturing industry sectors which attract lower salaries overall.

Size	2005	2004	2003	2002	2001
Large	\$58,962	\$57,571	\$55,485	\$58,033	\$51,376
Medium	\$60,445	\$57,886	\$52,619	\$52,313	\$53,422
Small	\$51,200	\$49,476	\$47,717	\$58,534	\$54,107
Don't Know	\$50,833	\$31,500	\$52,500	\$42,500	\$10,000
N/A	\$33,229	\$63,500	\$72,500	\$47,857	\$27,885

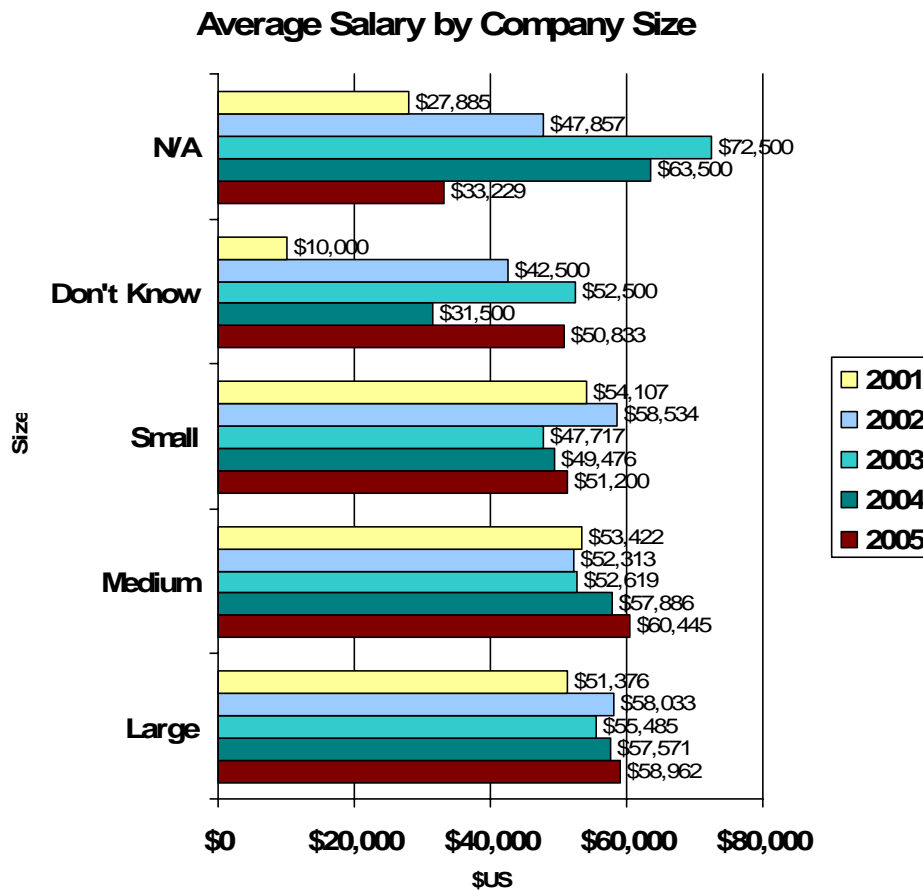


Fig. 15

Conclusion

In summary, the main conclusions from this survey are:

- After a number of years of steady growth, average salaries remain unchanged from 2004 to 2005. This is reflected in the mean salary of all respondents as measured in \$US. Interestingly the median salary at which 50% of respondents are paid above, and 50% below this salary, is also unchanged. Whilst this may appear at first to suggest little has changed, behind this result are a number of observations that prove interesting.
- In \$US terms, the best paid countries for Maintenance workers are Australia, Canada and the United Kingdom with the United States coming in fourth position. This is despite weaker currencies in these countries against the \$US as measured in the middle of 2004. However the primary reason for this is the mix of respondents in the Mining industry vs. Manufacturing industry. Australian respondents had a greater representation of the Mining industry which historically attracts greater salaries than the Manufacturing industry. Secondly, Australian respondents had a greater proportion of respondents at Maintenance Manager/Superintendent level, which also attracts higher salaries. A closer analysis of Canada identified no such special causes. Nevertheless, differences in taxation rates, and cost of living make comparison between countries a somewhat meaningless exercise. One should be cautious of these factors, and acknowledge the role that exchange rates had, and will continue to have, in the final outcome.
- Experience and Education continue to have an impact on salaries in the Maintenance sector. The more you have of each of these, particularly experience, the greater your salary is likely to be. However, education as a factor by itself was not a strong indicator. Whilst it had a marginal effect, it was experience that was clearly dominant. Furthermore, early years of experience showed the greatest rate of increase at 18% per year for the first 15 years of maintenance career (average for 5 year survey), but this drops significantly thereafter to 5% per year. Only after a further 10 years does this rate again increase. It appears that there is a nominal level of experience of 15yrs that may be considered a milestone in one's maintenance career. After this is achieved, additional experience is more highly valued after 25 years.
- Consulting Engineers and Management Consultants appear to be paid more highly than Maintenance Managers and Superintendents. Maintenance Planners have again shown high salaries in this year's results, significantly more than Plant Engineers and Maintenance Engineers. Commensurate with this trend has been a noticeable proportion of Maintenance Planners who have formal qualifications. In comparison to previous years, Maintenance Crafts/Tradesperson positions have shown the greatest proportional increase. This group stands out, together with Maintenance Foremen/Supervisors as having achieved the greatest salary rises.
- Larger organizations, combined with medium sized organizations appear to be paying better than smaller organizations. There is little to separate large organizations from medium organizations in terms of salary, but the relativity with small organizations has become more pronounced with relative salaries in small organizations having progressively eroded. This may be a result of increasing cost pressures with small companies less able to be sustained, but it is clear that company size is, in many respects, an indirect indicator of industry type. Typically Trade Retail, Healthcare Services and Food Manufacturing industries are not as highly paid as others, but are also typically smaller. The observation is that company size, as a factor in itself, is not a reliable indicator of salary.
- This year's survey undertook a more detailed analysis of industry effects. In terms of salary ranking the most highly paid industries on average were:
 1. Oil and Gas – Oil and Gas Extraction
 2. Mining – Coal
 3. Mining – Metal Ore

In an aggregate sense, main industry groups represented are ranked below:

1. Oil and Gas
2. Mining
3. Utilities
4. Manufacturing
5. Services

Closer examination of respondents showed that whilst the average salary in the Oil and Gas industry groups was greater than that of Mining Groups, this was more a result of some highly paid positions that were somewhat exceptional when looking at the sample distribution. This group had the greatest statistical variance, which was mostly explained by the variation in countries from which respondents resided. A similar point, but in reverse was identified with the Utilities based industries. Lower salaries in some countries tended to pull this average down. Interestingly, the Mining groups demonstrated a higher median salary than the Oil and Gas groups, in spite of achieving a lower mean (or average). Most of these respondents resided in Australia. Less variation in salary results were experienced in the Manufacturing and Services groups both in terms of distribution and also 5 year trends. However, salaries in Service industries ranked the lowest and also showed an overall decline in the last 12 months after many years of progressive increase.

As a closing point, salaries across maintenance professions have, in an overall sense, remained largely unchanged during 2004 – 2005. However, underlying this 'bottom line' has been a number of observations that deserved greater attention. Salaries are affected primarily by industry type, with some exceptions based on country of employment which can also affect the variation in results. The affect of company size is inconclusive and is seen more as an indirect indicator of industry type. The position held also has a significant effect, and this effect often mirrors experience which is a very dominant factor. It appears that 15 years experience represents somewhat of a milestone for salary growth. Education as a factor by itself is an unreliable indicator, but combined with experience appears to demonstrate, for a given salary level, a certain degree of interdependency – each compensating for the other. This will be examined more closely in future surveys!

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