

Division of Professional Relations  
Box 286, Rahway, N.J. 07065



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## FROM THE EDITOR . . .

### Salary Update

The last issue of the *Bulletin* presented a table of factors developed by ACS staff which could be used to calculate average salaries determined by degree, experience, work function and type of employer. Multiplying a base figure by the proper number in each of the four categories tells you the average salary for someone in your particular situation, based on ACS survey data.

As given in the earlier article, the base figure for 1980 was approximately \$28,800. The new figure for 1981 is \$32,000. You might want to whip out the table of factors, and see how you are doing.

### New York Program

The Division is planning a large and interesting program for the National Meeting in New York. It begins with a session *Sunday evening*, August 23, at the Sheraton Centre, opening the Symposium on Our Changing and Conflicting Personal Needs in Chemical Careers. Two psychologists will explore with the audience the personal passages experienced by chemists as they mature through their thirties and forties, balancing personal crises and professional crises against a changing understanding of their wants and needs.

Two separate symposia, on Monday morning and all of Tuesday, offer a package for those who are interested in planning for the future. The first session is on preparing

for retirement, and the other two are on financial planning for the chemist. The latter deals not only with general subjects, but with such topics as legal protections of financial rights; investment potential of real estate; collectables; stocks and bonds, etc.

There will also be a session on Monday afternoon devoted to projections of supply and demand for chemists, including speakers from the National Science Foundation and the Bureau of Labor Statistics.

All sessions are scheduled to be held at the Sheraton Centre. We hope you will find much of interest, and will be joining us at most of these symposia.

### Reminder

While on the subject of the New York meeting, may I remind you that the Division profits directly if you indicate on your registration cards that your primary interest is with the DPR. Part of the money the Division receives from the national ACS is based upon number of members who do this.

And while you are at it, if you know of friends who will be accompanying you, sign them up. An application form is printed in the *Bulletin* (photocopies are acceptable).

—Dennis Chamot

### DPR Membership Application

I am a member of the American Chemical Society. Enclosed is \$4 to cover dues through December 31, 1982.

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Printed Name \_\_\_\_\_  
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# SURVEY OF EMPLOYED INVENTOR AWARD PLANS

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Much discussion of the important and controversial subject of compensation for employed inventors was generated by the introduction into Congress in 1970 by Representative Moss of California of a bill promoting the idea that employed inventors' rights to extra compensation should be covered by Federal legislation. Modified versions of the original bill were introduced in succeeding sessions of Congress throughout the decade.

Those who have been involved in studying the issues raised by these discussions have found that unusually strong opinions exist both for and against such legislation, and that emotional reactions invariably enter into any exchange of thoughts on the subject. The idea of extra compensation for employed inventors is further complicated by the existence of moral and ethical issues as well as by difficult administrative problems in handling such compensation fairly.

In order to determine some basis from which resolution of these issues could be developed, both the American Chemical Society (ACS) and, independently, the Association of Corporate Patent Counsel (ACPC), conducted surveys of the inventor award plans already existing at major companies. Information was sought not only on the details of the plans but also on the philosophy behind them, their perceived value to both the employer and employee and how successful the plans had been. These surveys involved completing a questionnaire directed to corporate management either through technical officers (ACS) or the company patent department (ACPC). The responses, therefore reflected *management* rather than employee viewpoints and perceptions. This paper reviews the responses and summarizes the conclusions drawn by the committees which conducted the surveys.

## The 1971 ACS Employee Compensation Practices Survey

In 1971 the ACS Committee on Economic Status authorized a survey covering industry employers from a list of ACS Corporation Associates which included companies in these fields: chemical, pharmaceutical, petrochemical, photographic equipment, aerospace, electric and electronic equipment and

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systems, steel and other metal products, communications, foods, machinery, paper and textiles. The sizes of the companies varied from industrial giants to small companies where the personnel innovating and developing for the most part also had duties relating to marketing and other business activities.

Of 225 letters sent out, 142 responses were received. The responses and analyses were reported to the Economic Status Committee, to the ACS Committee on Patent Matters and Related Legislation (now the Committee on Patents and Related Matters) and to the ACS Department of Professional Relations and Manpower Studies. The survey itself and its analysis were not published, however.

## The 1978 ACPC Employee-Inventor Compensation Practices Survey

The 1978 survey was conducted by the ACPC through its membership consisting of the heads of patent departments of almost every United States corporation having four or more patent attorneys or agents on its patent staff. Of 201 member companies, 142 responded to the survey questionnaire; these respondents represent over \$500 billion of 1976 sales, and they employ about 400,000 individuals working in jobs where patent opportunities exist.

A summary of the data obtained was given in a paper presented at the October, 1978, meeting of the Industrial Research Institute.

## Results

The ACPC survey stated that an increase in chemical companies having award plans was noted between an earlier survey made in 1972 and 1978. The increase was from 40% to 56%. The 1971 ACS survey did not have comparable data.

Both direct and indirect, monetary and non-monetary awards are made by those

companies having compensation plans which responded to the survey questionnaires. No one company, however, reported using all the many types of awards. Each company tailored its plan to its own needs as seen by its top executive officers and modified by the opinions, biases and procedural necessities introduced at lower management levels.

## Direct Awards

Most frequently used is some sort of direct monetary payment tied to specific inventions or identifiable events such as issuance of a patent, initial commercial sale or start-up of a new process. Such awards are usually small or they involve modest non-monetary tokens. They are often presented at some function with appropriate in-house or external publicity.

The respondents in the survey generally stated that the primary purpose of direct awards is to provide incentives. The amount of the award is chosen to induce diligence in pursuing and reporting inventions and innovations, but is not made so high as to discourage communication with co-workers or supervisors. A secondary purpose is to show management appreciation.

The amount and frequency of payments based on disclosing an invention or filing a patent application and obtaining a patent are summarized in Table I. Table II lists the various types of direct awards.

## Indirect Awards

Indirect awards are more prevalent than direct awards, and usually have a higher monetary value. They are not awarded at the time of a unique occurrence nor are they tied in to an obvious event. The awards are usually given for a series of outstanding contributions rather than for any specific one. This type of award is also favored to reward creative individuals who have contributed to

TABLE I. Patent Related Awards

When Awarded	1971 Survey Range	1978 Survey Range
Token	63% \$1 or less	68% } Less Than \$50
On Disclosure or filing	12% \$10 to \$200	11% }
On filing and issue	22% Filing \$25 to \$100	20% }
	Issue \$50 to \$500	Up to \$1,000
On Issue	4% "Nominal" to \$100	1% }
Total Companies Surveyed	142	142

**TABLE II. Direct Awards****Monetary**

Award on disclosing or patenting  
Share of royalties, savings or profits  
Group award  
Corporate award

**Non-monetary**

Medallion or plaque  
Jewelry or memento  
Luncheon or dinner

development, production or marketing of both patented and unpatentable inventions or ideas.

The principal reason for giving indirect awards appears to relate to the concept of fairness to all employees in recognizing their different roles in successful creative innovations. Indirect awards can be used to reflect at an early date the value of unpatentable ideas, the sometimes major contributions made by personnel other than named patentees in developing embryonic ideas, and the quality and ultimate worth of successful inventive concepts. Indirect awards to a number of involved employees are also used to enhance communication and cooperation and reduce jealousies and resentments among members of a team.

In addition, indirect awards reduce possible distortions of patent and research efforts and do not give cause for interference with or prolongation of patent prosecution. Such awards also are helpful where difficulty is experienced in assigning values to specific patents, for example, where a group of patents or reciprocal grants of patents or know-how are involved.

The most commonly used indirect awards are salary increases, promotions, achievement awards and bonuses. Other types of awards, such as plaques, company stock, extra paid vacations and group lunches and

**TABLE III. Indirect Awards****Monetary**

Salary raises  
Invention achievement award  
Bonus  
Company stock  
Annual patent award  
Publication award

**Non-monetary**

Promotion  
Extra vacation time  
Membership in in-house scientific or inventors society  
Publicity, in-house and public  
Preferred office location and special furnishings  
Preferred parking space  
Membership in wider range of scientific or professional societies; additional meeting attendance

dinners are also frequently made. A list of such awards is given in Table III.

While most respondents in the 1971 ACS survey did not give the amounts of special awards or bonuses, one company had an extensive program, covering technicians as well as professionals, where the amounts awarded were from \$750 to \$3,000. Another company gave a minimum of \$4,000 for a commercially successful invention; a third company, several weeks pay, and a fourth a wide range of amounts up into five figures. Sometimes these awards are given over a three or four year period. Several companies stated they had special discretionary award or bonus programs for outstanding inventive contributions by employees other than patentees; the amounts awarded were usually in the \$1,000 to \$5,000 range. One or two companies reported group awards where the recipients were all technically trained personnel making material contributions to the total invention, the extent of sharing being determined by an appropriate committee.

In the 1978 ACPC survey about 44% of the respondents having inventor award plans, some 25% of all respondents, reported making special awards of substantial value to inventors. Such awards are generally discretionary, flexible as to time and event, and are most frequently awarded for inventions judged of special economic benefit. They range from \$1,000 to \$3,000. Some of these inventor awards are part of broader company-wide plans for creative contributions whether patents are involved or not. A few such plans provide for awards in the five-figure range.

**Awards Based on Royalties, Profits or Savings**

Awards based on royalties, profits or savings from specific inventions or innovations are seldom given. Only three or four companies of all those surveyed used this type of award.

The basic reason why this method is not used more frequently rests, in part, in the administrative complexities involved, both real and perceived. The administrative problems are associated with identifying and evaluating the worth of a particular invention or innovation, timing of payments and package or cross-licensing. In addition strained relations between employer and employee are perceived as a possible frequent consequence when the employee participates financially in the commercialization phases of his invention.

Another reason for the lack of use of such plans brought out in the 1978 ACPC survey is that most companies view their award plans as simply honoraria to provide an incentive to inventors to spend some time helping a patent attorney develop proper patent coverage, and not to provide a true reward to an inventor for his creativity. Partial compensation for employee inventors for creative contributions is provided by the use of substantial indirect awards, but only about one-quarter of all companies surveyed used such plans, as noted above.

Just what kind of award plans would be appropriate to fully compensate employed inventors has not yet been proposed or even studied or analyzed in any major way by any company. Before such plans can be developed it would appear necessary for company executives to accept the concept that compensation for successful innovations should be based on the commercial value of these contributions, and understand that the present prevalent use of honoraria is insufficient to motivate employee inventors much beyond the limited goal of cooperating with patent attorneys.

**Cost of Awards Programs**

Costs were not covered in the 1971 ACS survey but were addressed briefly in the 1978 ACPC survey. Out-of-pocket costs do not appear to be a substantial factor for most award plans. Table IV shows that the cost of the majority of the plans average less than \$50,000 per year. Administrative costs could add substantially to this total, but most companies surveyed indicated that these costs are absorbed with no accounting of them being made, or that they were inconsequential.

**TABLE IV. Out-of-Pocket Cost of Award Plans**

Annual Costs	Percentage of Companies
Less than \$5,000	25
\$5,000 to \$50,000	53
\$50,000 to \$100,000	10
Over \$100,000	12

(1978 ACPC Survey)

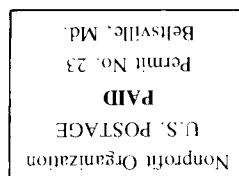
**Why Have An Awards Program?**

These surveys seem to show that awards plans seek to:

- Provide a useful motivational tool for timely disclosure and equally timely recognition of extra effort.
- Provide incentive compensation to employees for extra time and effort spent on developing ideas and inventions e.g. working with patent attorneys in obtaining patent coverage.
- Provide additional flexible pathways for compensation as conventional salary increases become more constrained by external forces.
- Provide as equitable and fair treatment as possible when designed to encourage enthusiasm for innovative achievement by all employees.
- Communicate the employer's genuine interest in inventive work to his employees.

An effective awards plan should have the following essential characteristics according to respondents:

- Must have strong, real, and visible sup-



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- port by upper and middle management.
- Should be public to have the greatest impact, although actual value of awards may be kept confidential.
  - Should be broadly based to reward creative achievement in general, including inventors, so as to avoid, insofar as possible, unfairness and counterproductivity.
  - Should be tailored to the specific needs of the company.
  - Should recognize differences in technology, the nature of the creative effort and the business climate in which individual companies operate.

The two most often mentioned negative aspects of awards programs are the difficulty in administering them and the possibility of arousing jealousy and secretive behavior. The possibility of the increased cost of handling non-meritorious inventions has also been cited as a minor disadvantage. However, most companies which have plans in operation have reported little or no serious trouble with any of these perceived problems.

A widespread objection to having inventor award programs is that they are unfair to non-inventor employees whose contributions

may be just as creative and valuable as those of inventors.

Another common objection is that technically oriented employees are "paid to invent", and therefore, their salaries alone are adequate compensation. Those who express this opinion generally agree that upward adjustment in salaries should be made in recognition of especially creative or inventive work, but that no additional recognition is needed or required.

In the 1978 ACPC survey only about 30% of the companies having plans believe their employee inventors are more productive with the plan in effect; the remainder do not believe having plans has affected employee productivity to any noticeable degree. It is significant that no respondent felt the plans had an overall negative effect on employee inventor productivity. The 1971 ACS survey did not explore this question.

## Conclusions

These surveys have been quite revealing concerning existing award plans and can serve as a source of basic information for other companies wishing to set up similar

award plans. It is interesting to note that only slightly more than half of the companies surveyed had effective plans in operation, and that these plans were devised to provide incentives to disclose inventions, to work with patent attorneys and to show management appreciation, and not to compensate employees for creative innovations. Plans that provide compensation commensurate with the commercial value of inventions are rare, only two or three being reported in these surveys. The respondents to these surveys generally agreed that employee productivity was affected positively or not at all, and that the cost of the plans, including administrative expenses, was not substantial. Possible negative aspects of awards plans, such as jealousy, secretiveness, and difficulty of administration were observed only slightly or not at all.

I conclude that employee inventor award plans, even those which give only token recognition, are a positive factor in fostering good employer-employee relationships, but that a great deal can still be done to improve existing plans and to provide more reasonable compensation for extraordinary contributions by employed inventors.