

Where N, N, etc. are the equivalents of the CODEN characters in order of their appearance in the CODEN and X is a whole number that is discarded.

(c) The remainder is converted to a check-character by the following set of equivalents:

remainder: 1, 2, . . . 25, 26, 27, 28, 29, . . . 33, 34  
Check-character: A, B, . . . Y, Z, 2, 3, 4, . . . 8, 9  
(or zero)

The numeric check-characters one (1) and zero (0) have been eliminated to avoid confusion with the alphabetic characters I and O.

(d) Sample calculation of a check character for the CODEN JACS-A;

N = J = 10  
N = A = 1  
N = C = 3  
N = S = 19  
N = A = 1

Substituting these equivalents for the characters in the CODEN into the equation yields an "X" of 5 and a Remainder of 20. The check-character equivalent of 20 is T. Thus, the complete CODEN with check-character is JACS-AT.

To obtain the sixth or check character of a CODEN assignment, look up the character in each position of the CODEN (proceeding from left to right) in the "CHARACTER" column of Table one. Move right to the appropriate

value column for the particular position of CODEN under consideration. Add the numeric value found to a cumulative total for all positions of the CODEN under consideration. When all five (5) positions have been handled and their values accumulated, search for the accumulated value in the "TOTAL" column of the "CHECK CHARACTER" in Table 2. The correct check character is to the immediate right of the "TOTAL" value. This character is placed in the sixth column of the CODEN assignment.

Example: The check character for the CODEN BOOKA is found by calculating the sum of the position values for the characters of the CODEN as follows:

B = 22  
O = 3  
O = 7  
K = 33  
A = 1

TOTAL = 66, whose check character = 7  
CODEN is then BOOKA 7

The CODEN system is currently used as a machine readable system for abstracts, citations, filing systems, and union lists. It is used throughout the world and is maintained and updated at the CODEN Project, Science Information Service, The Franklin Institute Research Laboratories, 20th and Race Streets, Philadelphia, Pa. 19103, on behalf of the American Society for Testing and Materials, the sponsor.

## A Survey on the Use of Scientific and Technical News Periodicals by Chemists

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**A methodology developed for the investigation of the use and usefulness of science news magazines is described. Detailed findings on various aspects of the use of *Chemical and Engineering News* by members of the Chemical Society (London) and the Royal Institute of Chemistry are presented.**

Empirical studies of the use of, the demand or the need for information, usually termed user studies, are customarily traced back to those reported by Bernal<sup>1</sup> and Urquhart<sup>2</sup> in 1948. Since then, the results of several hundred user studies have been published<sup>3</sup> and have provided an informed basis for making decisions about what new information services are needed and how existing services can be tailored more closely to users' requirements.

The conclusions drawn from such studies need, however, to be examined critically. In some cases, they may be of limited applicability either because of sample composition or because the process of data collection has altered the situation that previously existed. In other cases, they may represent only one of several interpretations of the findings and may reflect the preconceptions of the investigators and the subsequent survey design. Nonetheless, such studies do represent a substantial body of knowl-

edge and are essential to the effective planning of information activities.

User studies can be divided into:

So-called channel studies—those which focus on a single channel or medium, often without providing comparative data on the use of other channels or media.<sup>4,5</sup>

General studies of information-gathering behavior—no matter what channels are involved.<sup>6-8</sup>

So far, we have found no published channel studies of semiformal media, such as trade periodicals, controlled circulation journals, house journals, and science news magazines which publish topical information and comment on research developments and scientific affairs in newspaper-type style. Such studies are difficult to trace for two main reasons. First, reviewers sometimes exclude them from the field, known as information needs and uses, on the grounds that the sample and data collection procedures in such studies are idiosyncratic.<sup>9</sup> Second, the results of such studies are often confidential to the publishers. Some miscellaneous results of unpublished reader-

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ship surveys of *Chemical and Engineering News* conducted by the American Chemical Society (ACS) and other bodies have, however, been reported informally.<sup>10</sup> These results show the extent of use of *Chemical and Engineering News* relative to other journals among several groups—chemists and physicists in 71 institutions, subscribers to ACS research journals, and New York Public Library users. Indicators of use employed in these surveys were: regular readership, intensity of reading, percentage of reading time, perceived utility, library photo-service, and reading room use. On the basis of the findings of these surveys, Kenyon and Hader reach the somewhat vague conclusion that *Chemical and Engineering News* "is rendering an extensive service."<sup>10</sup> This, no doubt, is reassuring for the ACS, but it does not illuminate what needs *Chemical and Engineering News* satisfies for its readers.

Similarly, to the authors' knowledge, general studies of information-gathering behavior have paid little attention to the use of semiformal media. On the one hand, they have attempted to determine the respective roles of formal (published) and informal (oral) media and on the other to evaluate the use of specific formal media. Neglect of these semiformal media in general studies of information-gathering behavior results partly from the type of media categories traditionally employed by researchers. Typically, researchers have classified the literature on the basis of its source irrespective of its content, (e.g., professional society/government/trade) or its format (e.g., books/abstracts/journals). While useful for certain purposes, such categories cut across semiformal media which issue from a variety of sources and appear in a variety of formats. Consequently, such studies throw no light on the specific contribution made by this section of the literature to the over-all scientific and technical communication network.

An attempt to determine the functions of the semiformal media in general has, however, been made by Dopkowski.<sup>11</sup> On the basis of a content analysis of 78 scientific and technical news publications serving the life and life-related sciences and a previous study of the history of scientific periodicals, he concludes that the news publication is:

Repeating in the 20th Century practices characteristic of the 17th-18th century periodical of disseminating to its audience notices and digested forms of the still too numerous primary record

Contributing towards the fulfilment of scientists' needs for recognition, status, and prestige previously obtainable through a variety of other means

These conclusions are, however, unsupported by Dopkowski's evidence. One cannot infer from a content analysis how authors or readers actually use periodicals, although one may infer how editors intend they should be used.

In addition to the above mentioned studies there are a few isolated references in the information science literature to semiformal publications. Line<sup>12</sup> lists technical newspapers as one of 20 possible media for satisfying information needs, and in 1969, the Committee on Scientific and Technical Communication (SATCOM) also referred to news organs in their recommendations, suggesting that their primary function is the support of informal communication. SATCOM also claimed that these media are useful but without providing any supporting evidence or without any indication of how they are useful.

## OBJECTIVES OF THE STUDY

In the absence of previous research into the role of semiformal media, a study was designed to determine the

use and usefulness of five scientific and technical news periodicals which research showed were widely read by members of the Royal Institute of Chemistry (RIC), and the Chemical Society (CS). These periodicals are: *Chemical and Engineering News* (C&EN) *Chemistry in Britain*, *Chemistry and Industry*, *Nature*, and *New Scientist*. The specific research objectives were to determine why, how, and how much and with what effect these periodicals are used by members of the above-mentioned professional groups.

In this paper some detailed conclusions about the use and usefulness of *Chemical and Engineering News*—the only U.S. journal in the survey—to RIC/CS members are presented. (Detailed computer tabulations are lodged in the National Lending Library for Science and Technology, Boston Spa, Lincolnshire, England.)

## RESEARCH STRATEGY

The membership lists of the RIC and CS provided a convenient sampling frame of more than 40,000 qualified chemists. Readership data for several scientific and technical news publications (including *Chemical and Engineering News*) was first obtained by means of postal questionnaires from a systematically selected random sample of approximately 2000 RIC/CS members resident in the U.K. Among those who replied (80% of the original sample), 17% claimed to read or look at least one in four issues of *Chemical and Engineering News*, and they were sent a further questionnaire asking for more detailed information about their readership of and attitudes towards *Chemical and Engineering News*. (This questionnaire had previously been developed on the basis of face-to-face discussions with several groups of RIC/CS members and piloted among a small sample.) Of these questionnaires, 77% were returned, and the results reported below are based on the 190 questionnaires which were satisfactorily completed. Fieldwork was conducted between November 1971 and March 1972. The questionnaires used in this study appear in the Appendix.

## RESULTS

**Characteristics of *Chemical and Engineering News* Readers.** Readers of *Chemical and Engineering News* in our sample were drawn from all sections of the RIC/CS membership (Table I gives bracketed figures only for readers). A comparison of the characteristics of readers and nonreaders within this professional group suggests however that *Chemical and Engineering News* (or membership of the ACS) appeals slightly more to older members employed in industry and particularly to the better qualified than to others.

It was believed that a better understanding of the motivational factors underlying usage of a particular medium could assist in planning its design and promoting its use. An attempt was, therefore, made in the postal questionnaire to explore this aspect of use, and readers were asked to state their main purpose in looking at *Chemical and Engineering News* (Table II). Examination of the specific items readers mentioned suggests that they looked at this publication partly out of personal curiosity about commercial and research developments in the U.S. chemical industry and partly to obtain general background information for their own work activities.

It must be admitted, however, that the survey question did not elicit, as hoped, insightful data on readers' reasons for looking at *Chemical and Engineering News* as a whole.

# A SURVEY ON THE USE OF SCIENTIFIC AND TECHNICAL NEWS PERIODICALS BY CHEMISTS

Table I. Characteristics of Regular Readers of Chemical and Engineering News

|                                  | Readers, %           | Non-readers, % |
|----------------------------------|----------------------|----------------|
| Age                              |                      |                |
| Under 35                         | 42 (42) <sup>a</sup> | 49             |
| 35-44                            | 28 (30)              | 29             |
| 45+                              | 29 (28)              | 22             |
| Qualifications                   |                      |                |
| No degree (including no answers) | 22 (21)              | 35             |
| First degree                     | 24 (24)              | 28             |
| Second degree                    | 54 (55)              | 37             |
| RIC Membership                   |                      |                |
| Nonmember                        | 30 (30)              | 26             |
| Junior                           | 19 (19)              | 29             |
| Senior                           | 51 (51)              | 45             |
| Employment sector                |                      |                |
| Industry R&D                     | 30 (31)              | 26             |
| Other                            | 25 (25)              | 21             |
| Other                            | 45 (44)              | 53             |
| Total informants                 | 197 (190)            | 962            |

\* Bracketed figures give the corresponding percentages for the sample of readers who replied to the *Chemical and Engineering News* questionnaire.

Table II. Main Purpose in Looking at C&EN, Q. 5

|                                       | %   |
|---------------------------------------|-----|
| Industrial developments               | 23  |
| Technological developments            | 21  |
| Personal interest/relaxation          | 18  |
| General background information        | 17  |
| Research developments in own field    | 14  |
| Developments in U.S.A.                | 13  |
| Research developments                 | 10  |
| Feature articles                      | 10  |
| Research developments in other fields | 7   |
| Personal news                         | 2   |
| Forthcoming events                    | 2   |
| Situations vacant                     | 2   |
| Advertisements                        | 2   |
| Review articles                       | 2   |
| Letters                               | 2   |
| Other                                 | 9   |
| No specific reason                    | 8   |
| No answer                             | 2   |
| Total informants                      | 190 |

On the basis of studies of the motivational factors underlying the use of other technical media, we are confident, however, that meaningful data of this kind can be obtained using unstructured techniques such as extended interviews or group discussions.

## ASPECTS OF USE

A number of reasons prompted us to investigate reading habits. First, we believed they might illuminate the role and significance of a periodical for an individual reader. For instance, the reading situation, method of reading, and fate of a periodical might tell us something of the motives underlying its readership. Second, they might help explain the impact or lack of impact a periodical has on its readers. The time an individual devotes to reading a periodical and the intensity with which he reads it seem likely to be related to whether or not he finds it useful or interesting. Third, they could have practical implications for editorial policy.

Aspects of the use of *Chemical and Engineering News*

investigated included how readers usually acquired copies, usual method of reading, and items usually read or looked at.

## ACQUISITION

Readers were asked how they usually obtained their copies of the periodical. The results (Table III) shows that readership of *Chemical and Engineering News* in Britain is not confined to ACS members. In fact, the majority of RIC/CS members who look at the publication regularly see circulated or library copies.

Analysis of how readers acquired their copies by employment indicates that *Chemical and Engineering News* is most likely to be circulated to readers in R&D—other readers are less privileged and tend to have to rely on library copies.

## METHOD OF READING

To obtain an indication of whether readers seek specific information from *Chemical and Engineering News* or scan the periodical for items it might contain, we asked readers about their usual method of reading. In particular, we asked readers whether they scanned the pages in sequence or in order of interest. The former method of approach, we believed, would indicate that they looked at the periodical for what it might contain and the latter that they were deliberately seeking specific information. The results (Table IV) show that, irrespective of their background, two out of every three readers scanned the pages in sequence for any useful or interesting material it might contain.

## ITEMS USUALLY LOOKED AT

To obtain a measure of the intensity with which readers looked at *Chemical and Engineering News*, we asked them to indicate which of 13 items they usually read or looked at. With the exception of the display and classified advertisements, the list of items presented to readers corresponded with the main sections of the periodical at the time of the survey. Table V shows that while readers differed considerably in the extent to which they looked at the periodical, most claimed to at least scan 25% of the items or more.

Items which attracted the widest readership among RIC/CS members (Table VI) were Science, Technology, Industry and Business, and Chemical World This Week.

Table III. Acquisition of Chemical & Engineering News, Q. 2

|                                    | %   |
|------------------------------------|-----|
| Circulated to selected individuals | 32  |
| Read in library                    | 31  |
| Circulated automatically           | 27  |
| Sent as member of ACS              | 8   |
| Other                              | 3   |
| Total informants                   | 190 |

Table IV. Method of Reading, Q. 3

|                      | %   |
|----------------------|-----|
| In sequence          | 66  |
| In order of interest | 33  |
| No answer            | 1   |
| Total informants     | 190 |

Table V. Number of Items Usually Read or Looked at, Q. 6

|                                   | %   |
|-----------------------------------|-----|
| Less than 25% (3 items or less)   | 15  |
| 25% but less than 50% (4-6 items) | 39  |
| 50% but less than 75% (7-9 items) | 36  |
| 75% or more (10 items or more)    | 12  |
| Total informants                  | 190 |

Table VI. Items Usually Read, Q. 6

|                           | %   |
|---------------------------|-----|
| Science                   | 83  |
| Technology                | 82  |
| Industry/Business         | 76  |
| Chemical World This Week  | 75  |
| International             | 58  |
| Editorial                 | 49  |
| Education                 | 38  |
| Government                | 36  |
| Letters                   | 35  |
| Newsprints                | 34  |
| Display advertisements    | 34  |
| Classified advertisements | 29  |
| ACS News/People           | 24  |
| Total informants          | 190 |

### CONTRIBUTION OF CHEMICAL AND ENGINEERING NEWS TO READERS' WORK

From discussions with RIC/CS members during the development of the questionnaire, it became clear that scientific and technical news periodicals can influence not only readers' work but also their professional lives and private activities. Such varied data, we felt, were not amenable to collection in a single postal questionnaire. We, therefore, decided to limit our attention to the perceived contribution they made to readers' work on the grounds that if they did make a recognizable contribution they deserved more attention from information scientists than they had hitherto received.

The contribution that *Chemical and Engineering News* made to readers' work was approached in two ways. Readers were first asked to describe in their own words what they felt was the most important contribution that the periodical made to their work. They were then asked whether or not they recalled any specific items which had been directly useful in their work and, if so, for details about the item. By concentrating readers' attention on a recent critical incident, we hoped to reduce the likelihood of obtaining broad generalizations and to elicit a more detailed picture of the contribution made by a medium.

Replies to these critical incident questions should, of course, be interpreted with caution. They cannot be regarded as a general measure of whether or not a medium is useful in their nonwork activities (i.e., their professional or private lives) and instances of indirect use (i.e., cases where items had provided stimulation rather than immediate use). Furthermore, it is possible that readers either wrongly attributed items or failed to recall useful items.

In reply to the open-ended question on the role of *Chemical and Engineering News* in their work, most readers mentioned specific items which they felt made an important contribution and did not describe, as intended, how the medium as a whole fitted into their work activi-

ties. The failure of this question to elicit the intended response suggests that a less direct approach is required to obtain the desired data. Judging by the proportion of readers who failed to reply to this question or claimed that the periodical made no contribution to their work, it seems that a substantial minority did *not* find the periodical useful in their work. We assume, therefore, that their reasons for continuing to look at the periodical are related to their peripheral professional activities or personal interests. Moreover, many of the readers who believed that the periodical made some contribution to their work were not specific—merely asserting that it provided general background information without stating what kind. Those who did specify which aspects of the periodical made a contribution to their work, most frequently mentioned current information about industrial and technological developments in the U.S. (Table VII).

Table VII. Most Important Contribution to Work, Q. 10

|                                    | % <sup>a</sup> |
|------------------------------------|----------------|
| General background information     | 29             |
| Technological developments         | 19             |
| Industrial developments            | 15             |
| Developments in U.S.A.             | 7              |
| Research developments in general   | 9              |
| Research developments in own field | 4              |
| Other                              | 11             |
| None                               | 8              |
| No answer                          | 14             |
| Total informants                   | 190            |

<sup>a</sup> Note: Percentages add to more than 100% as multiple answers possible.

Table VIII. Recall of Specific Item Directly Useful in Work, Q. 10a

|                  | %   |
|------------------|-----|
| Yes              | 51  |
| No               | 48  |
| No answer        | 2   |
| Total informants | 190 |

Table IX. Characteristics of Useful Item, Q. 10b-d

|                                       | %   |
|---------------------------------------|-----|
| Content <sup>a</sup>                  |     |
| Scientific and technical developments | 34  |
| Commercial news                       | 13  |
| Science and technology policy         | 7   |
| Educational news                      | 3   |
| No directly useful item recalled      | 48  |
| Date of appearance                    |     |
| In last 3 months                      | 23  |
| 4-6 months ago                        | 11  |
| 7-12 months ago                       | 12  |
| 1-2 years ago                         | 5   |
| Over 2 years ago                      | 1   |
| No directly useful item recalled      | 48  |
| Sphere of use <sup>a</sup>            |     |
| Research                              | 29  |
| Policy-making                         | 10  |
| Teaching                              | 5   |
| Marketing                             | 3   |
| Purchasing                            | 3   |
| Other                                 | 7   |
| No directly useful item recalled      | 48  |
| Total informants                      | 190 |

<sup>a</sup> Percentages add to more than 100% as multiple answers possible.

Readers' replies to the critical incident question indicate that one in two readers were able to recall a specific item which had been directly useful in their work (Table VIII).

Examination of the characteristics of the most recent useful item which members recalled indicates that two thirds contained information about research developments and that most of the rest contained information about commercial developments. About half had appeared in the last three months and half had been useful in research (Table IX).

### RELATIVE MERITS OF ITEMS

Questions about the relative merits of different content items were included in the questionnaire as we felt that they illuminated the appeal of the periodical to British readers. The results are summarized in the form of a mean interest and mean usefulness rating. Details of the ratings appear in the computer tabulations and should be interpreted in the following way: a score of one or less indicates that an item is of below average interest/usefulness; a score of two, that it is average; and a score of three or four, that it is of above average interest/usefulness. Table X presents the mean ratings in order of their relative interest to readers. They show that three items were of particular interest to British readers—Technology, Science, and Industry/Business; three were of moderate interest—Chemical World This Week, International, and Education. The remainder were of little or no interest.

The mean usefulness ratings show that readers found Technology particularly useful and Science and Industry/Business moderately so. Other items were rated below average in terms of usefulness.

There were no significant differences in readers' interests by age or qualifications. Similarly, readers' interests

varied little with their work activity although there were some exceptions. A greater proportion of industrial than other readers had a keen interest in Industry/Business and Technology, whereas a greater proportion of other readers were keenly interested in Government and Education (Table XI).

Similarly, the proportion of readers in industry rating Industry/Business and Technology above average in terms of usefulness was greater than readers in other work categories. The respective figures for Industry/Business and Technology were 47%: 30% and 64%: 42%.

### CONCLUSIONS

Of the membership of the Royal Institute of Chemistry and the Chemical Society, 17% claim to read or look at *Chemical and Engineering News* regularly. Readers differ from nonreaders in this professional group in that they are older, better qualified, and more likely to be employed in industry. Available data on readers' motives for looking at *Chemical and Engineering News* suggests that they look at it partly out of curiosity about industrial and technological developments in the U.S.A., and partly because it provides a general background to their own activities. Most readers believe that it makes a useful contribution to their work and for many readers it had supplied information which was directly useful.

In general, British readers are uninterested in many of the items that regularly appear in *Chemical and Engineering News*. They are, however, keenly interested in the items they look at regularly and which they feel are useful in their work.

### APPENDIX

Table X. Relative Interest and Usefulness of Items

|                           | Mean Interest Rating  | Mean Usefulness Rating |
|---------------------------|-----------------------|------------------------|
| Technology                | 3.03 (1) <sup>a</sup> | 2.48 (1)               |
| Science                   | 2.95 (2)              | 2.18 (2)               |
| Industry/Business         | 2.76 (3)              | 1.98 (3)               |
| Chemical World This Week  | 2.39 (4)              | 1.48 (4)               |
| International             | 2.09 (5)              | 1.24 (5)               |
| Education                 | 1.47 (6)              | 0.64 (8)               |
| Editorial                 | 1.37 (7)              | 0.33 (11)              |
| Newsletters               | 1.31 (8)              | 0.53 (9)               |
| Government                | 1.28 (9)              | 0.72 (7)               |
| Letters                   | 1.01 (10)             | 0.18 (13)              |
| Display advertisements    | 0.99 (11)             | 0.84 (6)               |
| A.C.S. News/People        | 0.85 (12)             | 0.30 (12)              |
| Classified Advertisements | 0.83 (13)             | 0.44 (10)              |

<sup>a</sup> The number in brackets gives the relative order of the items with regard to interest and usefulness.

Table XI. Percentage Rating Item of Above Average Interest

| Item              | Total, % | Industry, % | Other, % |
|-------------------|----------|-------------|----------|
| Technology        | 67       | 75          | 55       |
| Industry/Business | 61       | 70          | 40       |
| Education         | 21       | 13          | 32       |
| Government        | 12       | 6           | 19       |
| Total informants  | 190      | 107         | 83       |

#### SURVEY OF SCIENTIFIC AND TECHNICAL NEWS PUBLICATIONS - PART I.

Please answer each question by ticking the appropriate answer code - unless otherwise asked.

##### Keeping up with scientific and technical news.

1. How interested are you in scientific and technical news? Please rate the following types of news to indicate your degree of interest - giving a score of 1 to news which is of most interest to you and 3 to news which is of least interest.

|   | Interest to you |
|---|-----------------|
| Scientific and technical journals of international and national level | ..... (5)       |
| Professional and training news  | ..... (6)       |
| Commercial and industrial news (e.g. products, prices, etc.)          | ..... (7)       |
| Personal and professional news (employment, training, etc.)           | ..... (8)       |
| Scientific and technical developments related to your work            | ..... (9)       |
| Scientific and technical developments unrelated to your work          | ..... (10)      |
| Other (please describe)   | ..... (11)      |

2. How do you keep up with scientific and technical news of interest to you? Please indicate which of the following methods you use fairly regularly - then rate the methods you use fairly regularly in terms of their usefulness to you, giving a score of 1 to the methods you find most useful and 3 to methods you find least useful.

|  | Use Fairly Regularly | Usefulness to you |
|--|----------------------|-------------------|
| Personal contacts  | ..... 1              | ..... (12)        |
| Conferences, seminars, conferences, symposia, etc.   | ..... 1              | ..... (13)        |
| Looking at national daily and Sunday papers  | ..... 1              | ..... (14)        |
| Watching TV  | ..... 1              | ..... (15)        |
| Listening to the radio   | ..... 1              | ..... (16)        |
| Looking at current issues of scientific and technical news publications (excluding those listed in Q3) | ..... 1              | ..... (17)        |
| Looking at current issues of trade journals  | ..... 1              | ..... (18)        |
| Looking at press releases  | ..... 1              | ..... (19)        |
| Looking at press releases (personal and professional) for your organization                            | ..... 1              | ..... (20)        |
| Other (please describe)  | ..... 1              | ..... (21)        |

3. Some publications which contain scientific and technical news are listed below. Please indicate which you read or look at fairly regularly - giving a score of 1 to those you read or look at most often and 3 to those you read or look at least often.

| Chemical Age                            | ..... 0 |      |
|---|---------|------|
| Chemical and Engineering News           | ..... 1 |      |
| Chemical and Industry                   | ..... 2 |      |
| Chemical World This Week                | ..... 3 |      |
| Engineering News-Record                 | ..... 4 |      |
| Industrial News                         | ..... 5 |      |
| Modern Scientific and Technical Journal | ..... 6 | (22) |
| Science                                 | ..... 7 |      |
| Scientific American                     | ..... 8 |      |
| Other (please describe)                 | ..... 9 |      |



## SURVEY OF SCIENTIFIC AND TECHNICAL NEWS PUBLICATIONS - PART II.

For each item in this section, please place a mark in the box - indicating your opinion - just under with a document - unless otherwise indicated. If you are unable to decide, please place a mark in the box marked "Don't know".

## A. Use of Chemical and Engineering News 5(25)

1. How often do you read Chemical and Engineering News? (Please indicate by marking a box in the following table.)

|                            |   |
|----------------------------|---|
| Every day                  | 0 |
| Two or three times a week  | 1 |
| Once a week                | 2 |
| Two or three times a month | 3 |

2. How often do you keep a copy of Chemical and Engineering News for reference?

|                            |   |
|----------------------------|---|
| Every day                  | 4 |
| Two or three times a week  | 5 |
| Once a week                | 6 |
| Two or three times a month | 7 |
| Once a month or less often | 8 |

3. How often do you keep a copy of Chemical and Engineering News for reference in your library?

|                           |   |
|---------------------------|---|
| Every day                 | 1 |
| Two or three times a week | 2 |

4. How often do you keep a copy of Chemical and Engineering News for reference in your laboratory?

|                            |   |
|----------------------------|---|
| Every day                  | 4 |
| Two or three times a week  | 5 |
| Once a week                | 6 |
| Two or three times a month | 7 |
| Once a month or less often | 8 |

## B. Use of Chemical and Engineering News for reference 7(20)

C. Chemical and Engineering News contains a variety of items.

Please indicate:

(a) which item(s) you usually read or look at

(b) which item(s) in this publication you have kept copies of or sought further information about in the last six weeks

|                          | (a) Usually read or look at | (b) Kept copies of or sought further information about in the last six weeks |
|--------------------------|-----------------------------|--|
| Editorial                | 1                           | 5 (30)   |
| Letters                  | 1                           | 5 (31)   |
| Chemical World This Week | 1                           | 5 (32)   |
| Industry/News            | 1                           | 5 (33)   |
| Education                | 1                           | 5 (34)   |
| Environment              | 1                           | 5 (35)   |
| Technology               | 1                           | 5 (36)   |
| ASCE News/People         | 1                           | 5 (37)   |
| Newsletters              | 1                           | 5 (38)   |
| Technical Advertisements | 1                           | 5 (39)   |
| Display Advertisements   | 1                           | 5 (40)   |

## D. Opinions of Chemical and Engineering News

7a. In what ways do you consider Chemical and Engineering News better than Chemistry in Britain? (48)

7b. In what ways do you consider Chemical and Engineering News worse than Chemistry in Britain? (49/50)

8. Please mark different opinions about the items in Chemical and Engineering News. Please rate each of the following items in terms of:

(a) their general interest to you - giving a score of 4 to items which are of greatest interest to you and 0 to items which are of least interest

(b) their general usefulness to you in your work - giving a score of 4 to items which you find most useful and 0 to items which you find least useful

|                          | General interest to you | Usefulness in your work |
|--------------------------|-------------------------|-------------------------|
| Editorial                | 1                       | 5 (51)                  |
| Letters                  | 1                       | 5 (52)                  |
| Chemical World This Week | 1                       | 5 (53)                  |
| Industry/News            | 1                       | 5 (54)                  |
| Education                | 1                       | 5 (55)                  |
| Environment              | 1                       | 5 (56)                  |
| Technology               | 1                       | 5 (57)                  |
| ASCE News/People         | 1                       | 5 (58)                  |
| Newsletters              | 1                       | 5 (59)                  |
| Technical Advertisements | 1                       | 5 (60)                  |
| Display Advertisements   | 1                       | 5 (61)                  |

## C. Usefulness of Chemical and Engineering News in your work.

9. What is the most important contribution that Chemical and Engineering News makes to your work? (67/68)

10a. Do you recall any specific item in Chemical and Engineering News which has been directly useful in your work?

Yes ... 0  
No ... 1 Please go to Q.11 (69)

11. What did the most recent item that was directly useful in your work concern?

|                                       |   |
|---------------------------------------|---|
| Science and technology policy         | 1 |
| Commercial and industrial news        | 2 |
| Professional and professional news    | 3 |
| Educational and training news         | 4 |
| Scientific and technical developments | 5 |

12. How long ago did it appear?

|                  |   |
|------------------|---|
| In last 3 months | 1 |
| 4-6 months ago   | 2 |
| 7-12 months ago  | 3 |
| 1-2 years ago    | 4 |
| Over 2 years ago | 5 |

13. Why was it useful in your work?

|                         |   |
|-------------------------|---|
| In research             | 1 |
| In teaching             | 2 |
| In marketing            | 3 |
| In policy-making        | 4 |
| In publishing           | 5 |
| Other (please describe) | 6 |

## D. Further comments.

11. Please add any further comments you would like to make about Chemical and Engineering News. (73/74)

## E. Personal Data.

12. Which of the following age groups do you come in?

|          |   |
|----------|---|
| Under 34 | 0 |
| 35-44    | 1 |
| 45-54    | 2 |
| 55+      | 3 |

13. What is your highest academic qualification? (75)

|                      |   |
|----------------------|---|
| First degree         | 4 |
| Second degree        | 5 |
| Other (please state) | 6 |

14. What professional qualifications do you have? (76)

|                      |   |
|----------------------|---|
| F.R.I.C.             | 0 |
| A.R.I.C.             | 1 |
| L.R.I.C.             | 2 |
| Grad.R.I.C.          | 3 |
| Other (please state) | 4 |

15. In which of the following sectors are you employed? (77)

|                      |   |
|----------------------|---|
| Industrial           | 5 |
| Government           | 6 |
| Academic             | 7 |
| Other (please state) | 8 |

16. Which of the following activities takes up most of your time in your present position? (77)

|                                     |   |
|-------------------------------------|---|
| Management/Administration           | 0 |
| Research/Development only or mainly | 2 |
| Research and Teaching combined      | 3 |
| Other (please state)                | 5 |

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