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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 214 was drawn up by Technical Committee ISO/TC 46, *Documentation*, and circulated to the Member Bodies in May 1974.

It has been approved by the Member Bodies of the following countries:

Australia	India	Spain
Austria	Iran	Sweden
Belgium	Ireland	Switzerland
Brazil	Israel	Thailand
Bulgaria	Italy	United Kingdom
Canada	Netherlands	U.S.A.
Finland	Poland	U.S.S.R.
France	Portugal	Yugoslavia
Germany	Romania	
Hungary	South Africa, Rep. of	

No Member Body expressed disapproval of the document.

This International Standard cancels and replaces ISO Recommendation R 214-1961, of which it constitutes a technical revision.

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Documentation — Abstracts for publications and documentation

0 INTRODUCTION

The growing volume of scholarly, scientific, technical, and other informational and instructional documents makes it increasingly important that the basic content of each document be quickly and accurately identifiable both by readers of the primary literature and by users of secondary services. This ready identification is aided if the author of a primary document (aided by editors) begins it with a meaningful title and a well-prepared abstract.

1 SCOPE AND FIELD OF APPLICATION

This International Standard presents guidelines for the preparation and presentation of abstracts of documents. Emphasis is placed on the abstracts prepared by the authors of primary documents, and on their publication, because such abstracts can be both helpful to the readers of these documents and reproducible with little or no change in secondary publications and services. The basic guidelines are also suitable for the preparation of abstracts by persons other than the authors, so specific guidelines are also included for the presentation of abstracts in secondary publications and services.

2 DEFINITIONS

In this International Standard, the term **abstract** signifies an abbreviated, accurate representation of the contents of a document, without added interpretation or criticism[1] and without distinction as to who wrote the abstract.[2]

An abstract should be as **informative** as is permitted by the type and style of the document; that is, it should present as much as possible of the quantitative and/or qualitative information contained in the document.[3] Informative abstracts are especially desirable for texts describing experimental work and documents devoted to a single theme. However, some discursive or lengthy texts, such as broad overviews, review papers, and entire monographs, may permit the preparation of an abstract that is only an **indicative** or descriptive guide to the type of document, the principal subjects covered, and the way the facts are treated. A combined **informative-indicative** abstract must often be prepared when limitations on the length of the abstract or the type and style of the document make it necessary to confine informative statements to the primary elements of the document and to relegate other aspects to indicative statements. See examples 1 to 3.

Abstracts should not be confused with related, but distinct, terms : annotation, extract, and summary. An **annotation** is a brief comment or explanation about a document or its contents, or even a very brief description, usually added as a note after the bibliographic citation of the document. An **extract** is one or more portions of a document selected to represent the whole. A **summary**, if one is needed, is a brief restatement within the document (usually at the end) of its salient findings and conclusions, and is intended to complete the orientation of a reader who has studied the preceding text. (Because other portions of the document, for example purpose, methodology, are not usually condensed into this type of summary, the term should not be used synonymously with "abstract"; i.e. abstract as defined above should not be called a summary, and a summary, if used, should not duplicate — should not take on the full scope of — the abstract.)

1) A brief, critical **review** of a document often takes on much of the character of an informative or informative-indicative abstract, but its writer is expected to include suitable criticism and interpretation.

2) The word **synopsis** was formerly used to denote a résumé prepared by the author, with the term **abstract** restricted to a condensation prepared by some other person. Elimination of this distinction, which has largely disappeared, was one of the reasons for revising ISO/R 214-1961.

3) More-indicative abstracts or even annotations are less expensive to prepare, and may sometimes be all that stringencies in publication economics will permit. However, governing factors such as economics should not be confused with true standards for the quality of abstracts.

3 PURPOSE AND USE OF ABSTRACTS

3.1 Determining relevance

A well-prepared abstract enables readers to identify the basic content of a document quickly and accurately, to determine its relevance to their interests, and thus to decide whether they need to read the document in its entirety.

3.2 Obviating reading full text of fringe documents

Readers for whom the document is of fringe interest often obtain enough information from the abstract to make their reading of the whole document unnecessary.

3.3 Usefulness for computerized full-text searching

Abstracts are also of value in computerized full-text searching for alerting and information retrieval.

3.4 Use in specific primary documents

The following recommendations are for authors and editors of specific documents and publications, such as journals, reports and theses, monographs and proceedings, and patents.

3.4.1 *Journals*

Include an abstract with every journal article, essay, and discussion. Notes, short communications, editorials, and "letters to the editor" that have substantial technical or scholarly content should also have brief abstracts.

3.4.2 *Reports and theses*

Include an abstract in every separately published report, pamphlet, or thesis.

3.4.3 *Monographs and proceedings*

A single abstract may suffice in a book or monograph that deals with a homogeneous subject. However, a separate abstract is also necessary for each chapter if the volume covers different topics or is a collection of papers by different authors (for example, the proceedings of a meeting or symposium). See example 4.

3.4.4 *Patents*

Each patent or application should be accompanied by an abstract, as required by the rules of the issuing country or international agency.

3.5 Use in secondary publications and services

Secondary publications and services can often make verbatim use of the abstracts provided in primary documents if these abstracts have been carefully prepared and are free from copyright restrictions. Such authors' abstracts can also provide suitable bases for the secondary service that orients its abstracts to a group of users different from those envisaged by the authors. A completely new abstract usually needs to be written only when brief, subordinated phases of a document are all that fall within the scope of a secondary publication.

3.6 Use on documentation cards

Documentation cards can be conveniently prepared or even separated from the "abstract sheets" of journals and proceedings that include and properly present such pages of abstracts; see ISO 5122, *Documentation – Abstract sheets in serial publications*[1]. Also, when documentation cards accompany documents such as reports, these cards should preferably carry the abstracts that these documents contain.

4 TREATMENT OF DOCUMENT CONTENT

Readers in many disciplines have become accustomed to an abstract that states the purpose, methodology, results, and conclusions presented in the original document. Most documents describing experimental work can be analysed according to these elements, but their optimum sequence may depend on the audience for which the abstract is primarily intended. Readers interested in applying new knowledge may gain information more quickly from a findings-oriented arrangement in which the most important results and conclusions are placed first, followed by supporting details, other findings, and methodology. See parts A and B of example 5.

The following rules are optimum for informative abstracts. Writers of informative-indicative and indicative abstracts should follow them to the extent that is practical.

4.1 Purpose

State the primary objectives and scope of the study or the reasons why the document was written unless these are already clear from the title of the document or can be derived from the remainder of the abstract. Refer to earlier literature only if it is an essential part of the purpose.[2]

4.2 Methodology

Describe techniques or approaches only to the degree necessary for comprehension. Identify new techniques clearly, however, and describe the basic methodological principle, the range of operation, and the obtainable accuracy. For documents concerned with non-experimental work, describe data sources and data manipulation.

1) At present at the stage of draft.

2) In this event, an adequate bibliographic citation should be given within parentheses.

4.3 Results and conclusions

Results and conclusions should be clearly presented. They may be abstracted jointly to avoid redundancy, but conjecture must be differentiated from fact.

4.3.1 *Results*

Describe findings as concisely and informatively as possible. They may be experimental or theoretical results obtained, data collected, relationships and correlations noted, effects observed, etc. Make clear whether numerical values are raw or derived and whether they are the results of a single observation or of repeated measurements. When findings are too numerous for all to be included, some of the following should receive priority : new and verified events, findings of long-term value, significant discoveries, findings that contradict previous theories, or findings that the author knows are relevant to a practical problem. Limits of accuracy and reliability and ranges of validity should be indicated.

4.3.2 *Conclusions*

Describe the implications of the results and especially how these relate to the purpose of the investigation or for preparing the document. Conclusions can be associated with recommendations, evaluations, applications, suggestions, new relationships, and hypotheses accepted or rejected.

4.4 Collateral information

Include findings or information incidental to the main purpose of the document but of value outside its major subject area (for example, modifications of methods, new compounds, newly determined physical constants, and newly discovered documents or data sources). Report these clearly, but in such a way that they do not distract attention from the main theme. Do not exaggerate their relative importance in the abstracted document.

5 PRESENTATION AND STYLE

5.1 Location of the abstract

Place the abstract (at least one in the language of the original document) as early as possible in each document.

In a journal, publish the abstract prominently on the first page of each article or other abstractable item, preferably between its title and author information and the text. It is also desirable to include it on an "abstract sheet" prepared in accordance with ISO 5122, *Documentation — Abstract sheets in serial publications.*

In a separately published report, place the abstract on the title page (if possible), on the "report documentation page" (if one is included), or on a right-hand page preceding the table of contents.[1)]

In a book, monograph, or thesis, place the abstract on the back of the title page or on the right-hand page following it. Place separate abstracts of chapters on or preceding their first pages.

5.2 Bibliographic information

In primary publications, include a bibliographic citation of the document on the same page as the abstract in a suitable location, for example in the running head or in the bottom margin. In secondary publications, or whenever the abstract of document is reproduced separately from it, precede or follow[2)] the abstract with the bibliographic citation of the original document. Three variations of this practice are shown in example 6.

For details of citation practices see ISO 690, *Documentation — Bibliographical references — Essential and supplementary elements.*

5.3 Documentation cards

Presentation of the abstract and its bibliographic citation in a format also suitable for documentation cards is particularly desirable. The use of cardboard is preferable, both for "abstract sheets" and for documentation cards accompanying a document, but if printing is on the same paper as the rest of a publication it should be on one side only, to permit cutting out and mounting on blank cards. Maximum printing dimensions of 64 mm × 95 mm will permit use of cards sizes of either 74 mm × 105 mm (ISO A7) or 75 mm × 125 mm (the size of the international library catalogue card).

5.4 Completeness, accuracy, and length

Since an abstract must be intelligible to the reader without reference to the document, make the abstract self-contained. Retain the basic information and tone of the original document. Be as concise as possible while still fulfilling requirements as to content, but do not be cryptic or obscure. Cite background information sparingly if at all. Do not include information or claims not contained in the document itself.

For most papers and portions of monographs, an abstract of fewer than 250 words will be adequate. For notes and short communications, fewer than 100 words should suffice. Editorials and "letters to the editor" often will require only a single-sentence abstract. For long documents such as reports and theses, an abstract generally should be less than 500 words and preferably short enough to appear on a single page. The contents of the document are often more significant than its length in determining the length of the abstract required.

1) If a brief foreword is deemed necessary to supply background information in a report, the abstract should follow the foreword and should not repeat its background information.

2) In the latter case, however, the title of the document may optionally precede the abstract.

5.5 Style

Begin the abstract with a topic sentence that is a central statement of the document's major theme, unless this is already well stated in the document's title preceding the abstract. In abstracts specifically written or modified for secondary use, state the type of the document early in the abstract when this is not evident from the title or publisher of the document or will not be clear from the remainder of the abstract. Explain either the author's treatment of the subject or the nature of the document; for example, theoretical treatment, case history, state-of-the-art report, historical review, report of original research, "letter to the editor", literature survey, etc.

5.5.1 *Paragraphing; complete sentences*

Write a short abstract as a single, unified paragraph, but use more than one paragraph for long abstracts. Write the abstract in complete sentences, especially in informative abstracts, and use transitional words and phrases for coherence. A sequence of keywords for indexing (separated by punctuation) may follow the text of the abstract, however, or may be substituted for it when an indicative abstract would otherwise have been employed.

5.5.2 *Use of active verbs and personal pronouns*

Use verbs in the active voice whenever possible; they contribute to clear, brief, forceful writing. However, the passive voice may be used for indicative statements and even for informative statements in which the receiver of the action should be stressed. For example :

Say : "Iron-containing bauxites sweeten gasolines in the presence of air."

Not : "Gasolines are sweetened by iron-containing bauxites in the presence of air."

But : "The relative adsorption coefficients of ether, water, and acetylene were measured by . . ."

Use the third person unless use of the first person will avoid cumbersome sentence constructions and lead to greater clarity.

5.5.3 *Terminology*

Use significant words from the text which will help computerized text searching.

Avoid unfamiliar terms, acronyms, abbreviations or symbols, or define them the first time they occur in the abstract. Use ISO units, symbols, and terminology whenever possible, or national standards in their absence.

5.5.4 *Non-textual material*

Include short tables, equations, structural formulas, and diagrams only when necessary for brevity and clarity and when no acceptable alternative exists.

ANNEX

EXAMPLES OF ABSTRACTS*

EXAMPLE 1 — Typical informative abstracts

THE LOW-INCOME FARMER IN A CHANGING SOCIETY[1]

To identify some major differences among low-income farmers, and to delineate the group that represents the real core of the persistently poor, data were obtained from 189 farm operators representing a stratified random sample in Fayette County, Pennsylvania, in 1957. The five main categories of individuals identified were: (1) the aged, (2) the physically handicapped, (3) the farm operator primarily oriented to non-farm opportunities, (4) the farm operator oriented to commercial agriculture, and (5) the farm operator oriented to subsistence agriculture. The characteristics of the core of low-income subsistence farmers who normally do not respond to either welfare or economic-development efforts were examined in greater detail. It was found that they: (1) retained traditional values while having lost many traditional subsistence skills, (2) failed to respond to greater agricultural efficiency and productivity efforts because commercial success was not highly valued, (3) placed extreme emphasis on neighborliness and friendliness as their primary goals, and (4) must respond to an attempt to change prestige orientation if their cycle of poverty is to be broken.

STORAGE OF NATURAL GAS. FUNDAMENTALS OF A NEW METHOD[2]

A methane absorption method may be more economical for peakshaving than liquefied natural gas or dry pressurized storage. A pressure holder containing liquid propane and/or butane precooled to $-76\ ^{\circ}F$ is supplied with cooled gaseous methane from supply lines at off-peak periods. The methane is introduced at the bottom of the tank to prevent the lighter liquid (methane absorbed in propane) from affecting further absorption. During peaks, a valve is automatically opened, and the resulting pressure drop brings the methane into the supply lines via a Wobbe-number regulator. In severe peaks, liquefied natural gas can also be used. Optimum conditions for the absorption method would be for 3 to 11,4 million ft^3/storage cycle or up to 1,14 billion ft^3/season.

TUNGSTEN CARBIDE AS ANODE MATERIAL FOR FUEL CELLS[3]

Stationary potentiostatic current-voltage curves for tungsten carbide and Raney platinum electrodes of equal size in the electrochemical oxidation of 6 M formaldehyde in 3 M sulphuric acid at 70 °C showed that tungsten carbide was superior in the potential range of interest for fuel cell anodes. Current densities after 3 h were 650 mA/g of tungsten carbide using formaldehyde, 500 mA/g using hydrogen, and 160 mA/g using formic acid. Graph.

LEAD : X-RAY DIFFRACTION STUDY OF A HIGH-PRESSURE POLYMORPH[4]

An X-ray diffraction study of lead under pressure has shown that the face-centred cubic structure transforms to the hexagonal close-packed structure at room temperature and a pressure of 130 ± 10 kbar. The volume change for the transformation is $-0,18 \pm 0,06\ cm^3$/mol.

PHOSPHATE EQUILIBRIA. II. STUDIES ON THE SILVER-PHOSPHATE ELECTRODE[5]

The solubility of Ag_3PO_4 was studied at 25 °C in 3M $NaClO_4$ by using glass and Ag electrodes (to measure $[H^+]$ and $[Ag^+]$). The solubility product of Ag_3PO_4, $K_S = [Ag^+]^3\ [HPO_4^{2-}]/[H^+]$, was calculated as $\log K_S = -6,70 \pm 0,04$. The data give no evidence for another solid phosphate or for a variation in the composition of Ag_3PO_4. They are compatible with small amounts of soluble Ag phosphate complex; the best agreement, though not conclusive, is with a complex $AgHPO_4^-$, with a formation constant (from Ag^+ and HPO_4^{2-}) $\log K < 3,18$. The equilibrium is relatively rapid. The Ag_3PO_4/Ag electrode may be used to study phosphate complexing with other metal ions.

CHROMIUM AS CATALYST IN AMMONIA SYNTHESIS[6]

When a chromium catalyst prepared by the decomposition of dibenzenechromium was used in the synthesis of ammonia at 436,5 °C, the rate constants of ammonia formation for a given catalyst surface area were of the same order of magnitude as those on iron. The results confirm the hypothesis that the catalytic action of metallic iron in ammonia synthesis is due to its atomic symmetry, and that other transition metals having the same symmetry, and similar interatomic distances as the (111) face of iron should also be catalytically active. The results also confirm an ammonia synthesis mechanism in which the initial product is N_2H.

THE FILM-FORMING PROPERTIES OF EMULSIFIERS OBTAINED FROM PETROLEUM[7]

A vanadium porphyrin complex formed a film around a water droplet in benzene much more rapidly than did asphaltenes or resins, and, as with emulsifiers from five crude oils, film formation was slightly faster in formation water than in distilled water in tests involving drawing a water droplet from a benzene solution containing 0,025 % by mass of the emulsifier into a capillary tube in 1 min or 2 h or 24 h at 25 °C. The film-forming ability of the emulsifier was determined by the ratio of the droplet length at the time of necking to the initial droplet length.

EXAMPLE 2 — Typical informative-indicative abstracts

DIAGNOSING INTERDEPARTMENTAL CONFLICT[8]

Resolution of interdepartmental conflicts that decrease productivity may require structural reorganization to reduce authority-prestige ambiguity and internal social instability, and/or may require intergroup training and counseling to reduce point-of-view conflicts. A thorough study is needed of the goals and environment of the organization as a whole. Experience (cited in numerous case histories) has demonstrated that three conditions must be established to reduce these interdepartmental conflicts. Each group must have internal social stability, including common interests and promotion opportunities. Groups in close contact must share external values through common training and point of view. Authority, as indicated by work flow and control, must follow prestige lines to be legitimate.

* Except for example 6, the format in these examples is similar to that used in primary publications; i.e. the document title is centred above the text of the abstract. The bibliographic references for the documents abstracted are collected at the end of this annex; they are given in accordance with ISO 690, except that the document titles have not had to be included.

THE IMPACT OF DEVELOPMENTS IN SHIPPING TECHNOLOGY ON SHIPPING OPERATIONAL COSTS[9]

The modern shipbuilder must anticipate future needs for marine transportation, specialize as to type of ship and size, and develop the required product on the soundest possible commercial basis. Low capital cost is important, but the builder's share of total cost is relatively small, and economies in shipbuilding therefore have limited effect on overall costs. Efficient design for both technical performance and low maintenance costs is of great importance, with the following items especially deserving of attention : ship form; propeller design; main propulsion units; bulbous bow; automation; cargo handling; paint systems and corrosion control; maintenance; and the moduling of engine-room systems. Mathematical methods are necessary for determining whether increased costs for innovations will be justified by operational savings, and examples of computer programs developed by B.S.R.A. (British Ship Research Association) for this purpose are cited.

A STUDY OF THE ARRANGEMENT OF SHUT-OFF VALVES IN THE CARGO OIL SYSTEMS OF LARGE TANKERS[10]

Previous work on pressure losses in shut-off valves is used as a basis for calculating moments in central and eccentric valves during loading, unloading, and ballasting. Throttling curves are shown for various types of valves. Although eccentric valves can reduce the turning moment they are sensitive to changes in flow direction. Further work is needed on the effect of velocity, pressure ratio, and turning moment in systems where changes in flow can result in large hydraulic moments.

PRODUCTION-ORIENTED STRUCTURAL DESIGN OF LARGE SHIPS[11]

Design of ships such as a 240 000 dwt tanker and a 150 000 dwt OBO carrier to facilitate economic production without loss of ship efficiency involves simplification, standardization, minimum weld lengths, and the selection of hull components and assemblies with ease of production and assembly in view. Considerations of ease of transport, storage, assembly, erection, prefabrication, and fitting out at an early stage are discussed.

EXAMPLE 3 — Typical indicative abstracts

As noted in clause 2, indicative abstracts should preferably be prepared only when the nature or length of the document being abstracted will not permit the writing of an informative or informative-indicative abstract. See also example 5, part C.

HOW METALLOGRAPHY HELPS THE MATERIALS ENGINEER[12]

Eleven case histories demonstrate the application of metallography in solving material problems. Metallography helps the engineer who is seeking details of brazed joints; viewing details of grain-boundary precipitate; examining composites formed by a high-energy-rate process; investigating aspects of stress corrosion; studying how tension and creep affect composites; studying corroded bearings; checking "white layer" on nitrided surfaces; finding out how coring develops in cast brass; analysing failures with the electron microscope; comparing carbides in cast and wrought stainless; and doing research at extra-high magnification. Details of structures in photos are interpreted.

ADVANCES IN THE CONSTRUCTION AND UTILIZATION OF TANK CARS. 3. THE DESIGNER'S VIEWPOINT[13]

A brief survey covers the gradual development of tank car design from low-capacity riveted two-axle tanks to the two-truck, four-axle high-payload cars of today; tank cars designed for the transportation of class IIIa liquid products at 1 atm, including the required wall thickness, quality of steel, manner of construction, accessories, pressure tests of the welded seams, maximum capacity, and load; pressurized cars for carrying class Id liquefied gases, including the materials specifications, steel composition, X-ray testing of welds, safety valves, level gauges, hydraulic pressure testing, and separate draining equipment for the liquid and gas phases; frame construction (central girder or side frame); truck construction (springs and shock absorbers); and trends toward unified European regulations covering transportation by tank cars, higher speeds and loads, and automatic coupling.

DUST TRANSPORT IN TRANSMISSION AND DISTRIBUTION LINES[14]

The study deals with the effect of pressure on the transport velocity of dust in gas pipelines, including such factors of the total process as the effect of weight and friction forces on the dust particle; speed limit of particle fall as a function of its diameter and the characteristics of the gas stream; thickness of the laminar layer on "dunes" formed on the pipe bottom; and speed of gas in this layer. Correlations developed were verified experimentally.

ORGANIZATION OF SMALL LABORATORY[15]

A view is presented of the day-to-day operation of a small mechanical-testing laboratory engaged primarily in experimental stress analysis. Emphasis is placed on the training of personnel, availability of modular test equipment and facilities, and the systematic organization of materials and procedures.

DUTCH EQUIPMENT FOR THE CHEMICAL PROCESS INDUSTRY[16]

A discussion on the manufacture in the Netherlands of equipment for the petrochemical and chemical process industries covers heat exchangers, evaporators, heaters, distillation apparatus, pumps, compressors, furnaces, pressure vessels, and gas tanks.

RESIDUAL REDUCTION AND DESULPHURIZATION BY I.F.P HYDROTREATMENT[17]

A discussion covers the main features of the pretreatment designed to improve the product quality and catalyst life in the *Institut Français du Pétrole* hydrodesulphurization process.

EXAMPLE 4 — Abstracts of monographs and chapters

A. Whole monographs. A single abstract may suffice if the monograph deals with a homogeneous subject.

PART-TIME INDUSTRIAL COOPERATIVE EDUCATION. A MANUAL FOR ADMINISTRATORS AND COORDINATORS[18]

This manual is intended to assist school administrators and teacher coordinators in establishing and maintaining programs of industrial cooperative education. These are programs of vocational education designed to provide high-school youth with opportunities to receive on-the-job training in a trade or industrial occupation, of his or her choice, by cooperatively utilizing the resources of the school and community. This 1968 revised edition presents the basic philosophy, activities, methods, and operational procedures of industrial cooperative education programs. The topical areas include : (1) establishing an industrial cooperative education program; (2) the high-school administrator's responsibilities; (3) the teacher-coordinator; (4) the teacher-coordinator begins his work; (5) selection and placement of student learners; (6) related instruction, coordination, reports and records; (7) advisory committees : their organization and function; (8) program evaluation in industrial co-operative education; and (9) aids for the teacher-coordinator.

B. Chapters. A separate abstract is needed for each chapter if a monograph covers many different topics or is a collection of articles by different authors, as in the case of proceedings of a meeting or symposium. Abstracts of chapters should be as informative as possible, but should at least indicate what is covered.

Information-type chapter abstract

PSYCHOLOGY AND THE GIFTED CHILD[19]

A critique of the concept of giftedness concludes that the gifted may be divided into the intellectually capable who are not necessarily academically able, the academically able who must be intellectually capable, the student with hidden talent brought out by opportunity and desire rather than tests, and the highly creative student with minimal academic capacity (IQ of 115) plus an added factor. In a discussion of the special needs of the intellectually superior student for time to think, listen, dream, and converse, it is contended that while added activities should not be forced on the student, he should not be permitted a merely average performance. A discussion of the equity of special programs for gifted students considers advantages and disadvantages of intelligence grouping and acceleration of gifted students. Encouragement of personal independence and autonomy is deemed essential to the productive and innovative development of the gifted. Problems of social adjustment encountered by gifted children include social acceptability and the need to excel without seeming to work very hard. There is a paucity of data on gifted girls and women. The problems of underachievement and dropouts with high IQ scores are discussed.

Indicative-type chapter abstract

CYCLIC SULPHIDES[20]

Ring-opening polymerization of alkylene sulphides, episulphides, thioaldehydes, cyclic disulphides, and mixed oxygen-sulphur ring compounds are reviewed, with 83 references. Anionic polymerization, anionic copolymerization, cationic polymerization, coordinated ionic polymerization, and radical polymerization of episulphides, cyclic polymers of thioaldehydes, the polymerization of oxathiolanes, and the polymerization of cyclic disulphides are discussed.

EXAMPLE 5 — Order of document-content subject elements

A. Informative abstract with conventional order of elements (purpose, methodology, results, and conclusions)

NEMATODE CONTROL IN SWEET POTATOES[21]

Because damage to sweet potatoes by root-knot nematodes makes it difficult for some growers in Mississippi to produce marketable grades, the Truck Crops Branch Experiment Station in 1967 conducted off-station tests with nematocides (including fumigants) on three- or four-row replicated and randomized field plots known to be infested with the nematodes. Both known and experimental nematocides were employed. The commercial fumigants Vorlex, Dow W-85, and DD significantly increased yields and quality in the treatments of rows. Vorlex or Dow W-85 should be applied at 2,5 gal/acre and DD at 9 to 10 gal/acre, 8 to 10 in deep in the centre of the row, 14 to 30 days prior to planting. Broadcast fumigation was also effective, but required higher fumigant levels. Among the experimental solid nematocides, Bayer 68138 and Dasanit showed promise. More information is deemed necessary than was obtained from this one-season field test.

B. Informative abstract with findings-oriented arrangement of elements (major results and conclusions, supporting details, other findings, and methodology)

NEMATODE CONTROL IN SWEET POTATOES[21]

The yield and quality of sweet potatoes can be increased by soil fumigation or the addition of solid nematocides in some areas of Mississippi. The commercial fumigants Vorlex, Dow W-85, and DD significantly increased yields and quality in the treatments of rows. Vorlex or Dow W-85 should be applied at 2,5 gal/acre and DD at 9 to 10 gal/acre, 8 to 10 in deep in the centre of the row, 14 to 30 days prior to planting. Broadcast fumigation was also effective, but required higher fumigant levels. Among the experimental solid nematocides, Bayer 68138 and Dasanit showed promise. This study of control of root-knot nematodes was conducted by the Truck Crops Branch Experiment Station in 1967 on three- and four-row replicated and randomized field plots known to be infested with the nematodes. More information is deemed necessary than was obtained from this one-season field test.

C. Indicative abstract of the same document. This type of abstract is included here only to demonstrate the validity (usefulness) of preparing an informative abstract when the document permits it, as defined in clause 2.

NEMATODE CONTROL IN SWEET POTATOES[21]

Problems caused by root-knot nematodes in growing sweet potatoes in Mississippi are discussed. Experiments with commercial and experimental nematocides, conducted in 1967 by the Truck Crops Branch Experiment Station, are described. Methods of application including imbedding in rows and broadcasting are compared. Results are given for specific nematocides, including the commercial fumigants Vorlex, Dow W-85, and DD, and the experimental solid nematocides Bayer 68138 and Dasanit.

EXAMPLE 6 — Different locations of the bibliographic citation with abstracts in secondary publications

A. Secondary abstract preceded by full bibliographic citation. While this order is conventional, it may slow reader access to actual information, since even the document's title is usually subject-oriented rather than findings-oriented.

Anderson, John; Efron, Leonard; and Wong, S. Kuen. MARTIAN MASS AND EARTH-MOON MASS RATIO FROM COHERENT S-BAND TRACKING OF MARINERS 6 AND 7. *Science*, 167 (3916) Jan. 16, 1970 : 277-279. Range and Doppler tracking data from Mariners 6 and 7 have been used to obtain values for the ratio of the mass of the Earth to that of the Moon which are in substantial agreement with those determined from other Mariner and Pioneer spacecraft. There is an inconsistency of about 0,004 % in values for the mass of the Moon determined from lunar trajectories. A gravitation constant for Mars of 42 828,48 ± 1,38 km^3/s, obtained on the basis of data collected during the 5 days prior to the closest approach of Mariner 6 to Mars, is in excellent agreement with the result obtained by Null from tracking data of Mariner 4.

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THE RATIOS OF THE MASS OF THE EARTH TO THE MOON OBTAINED FROM COHERENT S-BAND TRACKING OF MARINERS 6 AND 7 ARE IN SUBSTANTIAL AGREEMENT with those determined from other Mariner and Pioneer spacecraft. Range and Doppler tracking data from Mariners 6 and 7 yielded ratios having an inconsistency of about 0,004 % in values for the mass of the Moon determined from lunar trajectories. A gravitational constant for Mars of 42 828,48 ± 1,38 km^3/s, obtained on the basis of data collected during the 5 days prior to the closest approach of Mariner 6 to Mars, is in excellent agreement with the result obtained by Null from tracking data of Mariner 4.

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C. Secondary abstract preceded by the title of the document, but with the remainder of the bibliographic citation suitably displayed after the text of the abstract. This arrangement presents the reader with the subject of the document as stated by its author, but then immediately presents the information provided. Quick access to the remainder of the biliographic citation can be afforded by indenting it and/or by the use of distinctive type faces.

MARTIAN MASS AND EARTH-MOON MASS RATIO FROM COHERENT S-BAND TRACKING OF MARINERS 6 AND 7. Range and Doppler tracking data from Mariners 6 and 7 have been used to obtain values for the ratio of the mass of the Earth to that of the Moon which are in substantial agreement with those determined from other Mariner and Pioneer spacecraft. There is an inconsistency of about 0,004 % in values for the mass of the Moon determined from lunar trajectories. A gravitational constant for Mars of 42 828,48 ± 1,38 km^3/s, obtained on the basis of data collected during the 5 days prior to the closest approach of Mariner 6 to Mars, is in excellent agreement with the result obtained by Null from tracking data of Mariner 4.

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