

A Systematic Approach to Handle Reference Queries

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Abstract

The need of information service in special libraries has been outlined. It discusses various facets of reference queries and suggests a working model for handling queries in a more systematic way. It also lists key information resources of print as well as electronic media available at Defence Science Library in the area of Defence Science and Technology.

1. INTRODUCTION

To provide the right information to the right reader, in the right way and at the right time, in the right personal way is the basis of all reference work. According to the American Library Association's Glossary of Library Terms, *Reference Service is that phase of library work which is directly concerned with assistance to readers in securing information and in using resources of the library in study and research.* Ranganathan defines Reference Service as "*Personal service to each reader in helping him to find the documents answering his interest at the moment pin-pointedly, exhaustively and expeditiously*". Both definitions convey that Reference Service means "*process of establishing contact between a reader and his documents in a personal way*". 'His documents' refer to those which will serve his requirements precisely.

2. FACTORS THAT NECESSITATE REFERENCE SERVICE

Following are the key factors that necessitate reference service in libraries:

- ⊕ Users' day-to-day information needs and demand for intensive search service
- ⊕ Complexities in the growth of libraries and their use

- ⊕ Modern tools and techniques employed in libraries
- ⊕ Volume and variety of documents
- ⊕ Impact of information technology

3. CATEGORIES OF REFERENCE QUERIES

On the basis of experience gained at the reference desk of Defence Science Library (DSL), which is a central special library of Defence Research and Development Organisation, shows that the queries asked at a reference desk are unpredictable and vary from simple directional requests to elaborate research questions from various micro fields of S&T information. Complex queries involve considerable search time and the use of many reference sources. To provide information against such queries, reference librarian may make use of resources of the library as well as those resources available outside the library. And sometimes a simple query proves to be difficult to answer as either it is unfamiliar or the resources for the same are not available in the library. Nevertheless, reference librarians are expected to answer unfamiliar or complex reference queries with the same skill they exercise for familiar or simple queries.

On the basis of time spent and information resources required to be consulted, reference queries/requests received at DSL may be put under the following three categories:

1. Directional guidance in the use of the library, its collections or services.
2. Ready reference service or short range reference service.
3. Exhaustive search service or long range search service.

Directional guidance is generally sought by persons who use the library for the first time. Such persons may seek help or assistance, for example, in locating the current issues of the periodical title, or where books are displayed or in general to know what services are available in the library.

Ready Reference Service involves reference queries of fact finding nature or identifying a few documents relevant to a particular query. These are kinds of needs which are clearly understood without too much discussion and the source(s) required are obvious and fairly easy to identify. In this service search is usually restricted to ready reference sources like dictionaries, encyclopaedias, yearbooks, biographical sources, directories, etc. Such services do not take much time and hence are also known as short range reference services. Thus the concept of ready reference service is mainly based on duration of time spent. This service is distinguished from the purely directional level of work by the fact that reference librarian need to consult some sort of reference source(s) rather than simply answering from personal knowledge. The professional skills required here are knowledge of reference sources, their contents, organisation and presentation, etc. and matching the question with the appropriate reference source to have the answer.

Exhaustive Search Service deals with research level questions. Research level questions require extended searches, perhaps over several hours, or days and sometimes even longer periods, possibly involving several members of the reference staff concurrently. Answering such questions takes enormous time because it requires using a number of reference sources because of the nature of information

sought. Hence such service is also known as long range reference service. This service includes retrospective searches also on a given topic. Such queries are very common in DSL, where users are researchers, scientists and decision makers. They must be provided the required information irrespective of the form or place from where it may be sought.

In long range service, the search starts with ready reference sources of information and is continued into books, periodicals, reports, non-book materials, etc. In case, information is not located in the library, then search may be continued into resources of other libraries located locally as well as outside. Although such searches take long time, here also time is a crucial factor as DSL serves a special category of users. Reference librarian is expected to provide information quickly and efficiently and required to work even under pressure without compromising with the quality of the work.

In handling such long range reference queries effectively and timely, a proper understanding of the reference process is required.

4. REFERENCE PROCESS

Reference process is "the process of answering questions". It might be defined even more generally as the process of satisfying specific, recurrent information needs.

Performing reference work requires more than learning a limited number of reference sources. No reference librarian can remember all the reference sources, that could satisfy a specific query, nor keep up with the constant flow of new materials. But with the aid of a systematic approach for satisfying information requests the reference person can apply certain basic principles to locate an answer, regardless of the nature of the query asked.

This approach, involves interaction between the librarian, the library user, and the library's resources in order to satisfy the user's information need. With an understanding of the reference process, a reference librarian is not restricted to a limited number of reference sources but can apply general principles when answering unique or difficult requests.

Time is another vital factor, especially in environment like that of DSL, which plays a decisive role in providing reference service. Providing correct information is of no use to the user until it is given in time. Correct and timely information only carries weight and forms the base of an effective reference service.

Although each reference librarian develops his/her own techniques and approaches to answer reference queries, the basic process of satisfying specific needs remains essentially the same. A systematic common approach to handle reference queries is worked out on the basis of practices followed at DSL, as this helps in achieving the very basic objectives of reference service, i.e., providing right information in the right time.

The complete reference process, i.e., from the receipt of an information request to communication of an answer to the user can be broken down into a series of decision-making steps. A working model of the reference process is shown in Figure 1.

Steps involved in the reference process as shown in Figure 1 may be analysed as follows.

Step 1

The first step in the reference process is the identification of the essential information in the request of a library user. At this initial stage, the reference librarian analyses the query to determine the subject of the request and to identify the type of information needed. The query may be for exhaustive search or only a fact finding type.

Step 2

The next step is to determine whether any clarification or amplification of the query is required. This process is called *reference interview*. Reference interview is the most important step of the whole reference process, which requires discussion with the user about the request in order to gain a more complete understanding of the actual information need. The basic purpose of the reference interview, no matter how brief or how long, is to:

- ascertain what information the user wants for his particular question or problem. Depth of knowledge on the subject of query requested.

- clarify the question in terms of itself (i.e., what it really means, rather than how it is expressed), and in terms of translating it into query statement words or phrases.
- ascertain the amount, level and difficulty of the materials which will answer that question.
- ascertain the time and resources required to answer the query.

This technique demands the highest communication & articulation skills to elicit the exact nature of the user's need for assistance and research support. If the librarian begins the search with an inaccurate understanding of what is really wanted, the information generated will be of no use to the user. This wastes time for both, and may discourage the user from seeking reference service again.

To have a better understanding of the actual information need, DSL is making use of the search request forms. To get maximum information from user in relation to a particular query, apart from verbal discussions, the users are requested to fill these search request forms which helps a lot to ascertain the actual information need of the user.

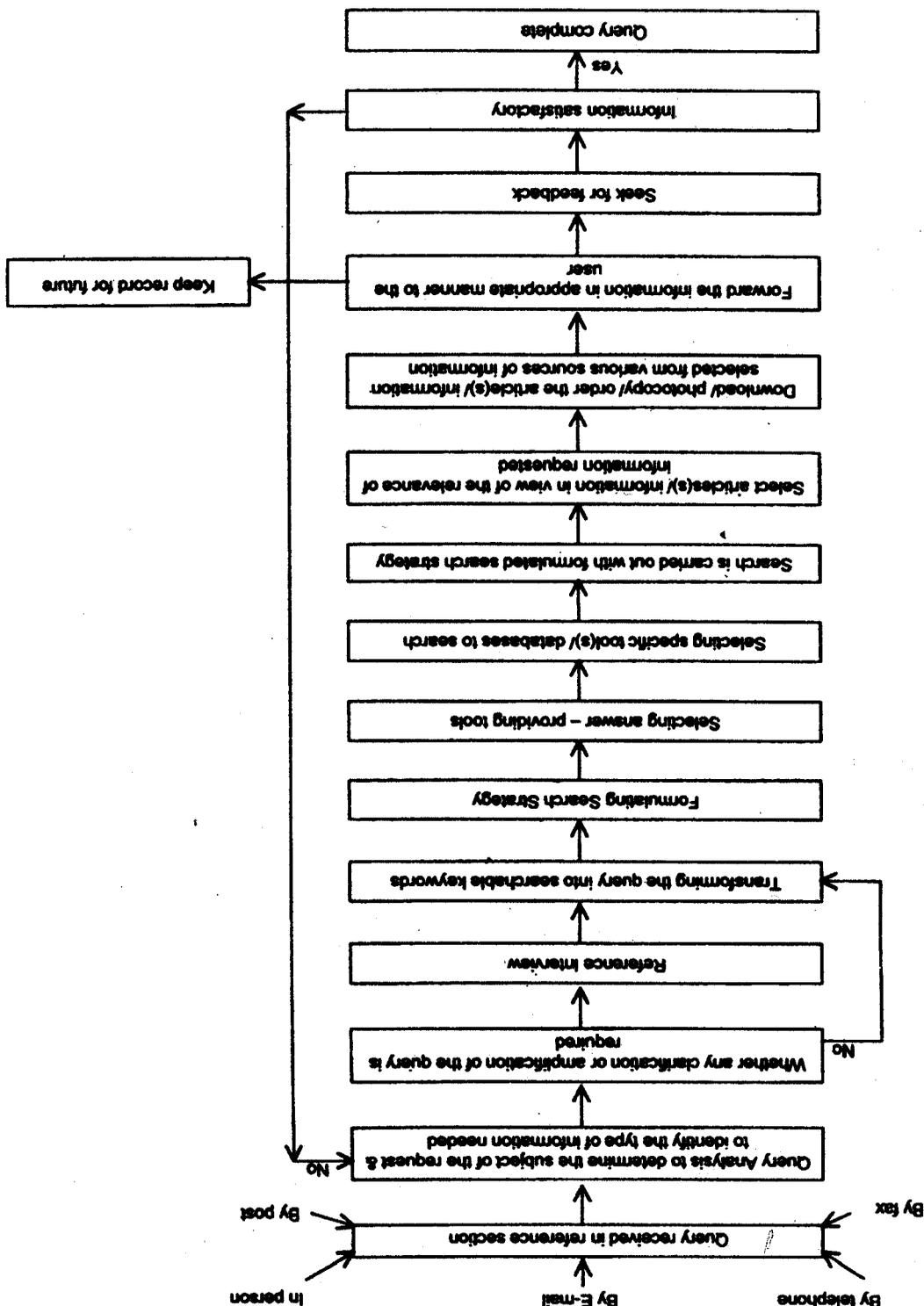
Step 3

Once the actual information need has been clarified, the next step is to refine the statement of the user and transform the query statement of the user into subject descriptors/keywords i.e. translating query words into language of answer providing tools. Transforming the query statement into search terms is not merely a translation of query words into search terms but it is much more than this. The step involves the selection of search terms from various sources and standardising these selected search terms with the help of thesauri, such as, Spine, Inspec, Thesaurus of Engineering and Scientific Terms.

Step 4

The fourth step is to formulate a search strategy. Search strategy is the line of action formulated for searching the information. This step is very important as formulation of search statement involves the grouping of selected search terms into search subsets using Boolean logic. For example, all synonyms, related terms form a search subset

Fig. 1: Steps involved in reference process



using 'OR' and final answer is the result of combining the different subsets with 'AND' operator. The terms which should not make the part of searched information may be excluded using 'NOT' operator.

Step 5

Once the line of action for searching information is chalked out, the reference librarian can mentally identify categories of reference tools likely to contain the type of information needed. Any reference query, no matter how basic, needs to have access to a variety of information resources. The amazing developments in information technology have revolutionised the process of information storage and retrieval. Apart from conventional paper media and traditional online searching, a large number of reference sources are now available in the form of CD-ROM databases. Further Internet-based services are playing a vital role in providing ready reference as well as exhaustive literature search services in today's scenario. It is in this Step that the reference librarian determines whether to search the answer from the conventional or electronic resources including internet. The various reference tools available at DSL may be grouped under following two major categories.

< Paper Media: It includes well known conventional varieties of reference books—encyclopedias, dictionaries, handbooks, yearbooks etc.

< Non-paper Media: It includes:

- (a) Microforms
- (b) Electronic Media, and
- (c) Audio-visual Material

A list of some of the important reference tools belonging to above mentioned categories are listed as Appendix—A. These resources are used extensively at DSL to handle most of the reference queries related to defence science and technology discipline.

Step 6

The above step is followed by the selection of a specific title in which to begin searching for an answer to the query as matching the query with appropriate reference source is the real

ability of reference librarian to complete a query in most successful way.

Step 7

This step involves location of an answer within the pages of the specific title(s)/ database(s) selected. This is accomplished by selecting search headings which will provide access to information reference source.

Step 8

The final step is selection of an answer. This step is crucial because the information identified in this step must be accurate, complete and useful to the user.

The process is completed only if that information proves to be satisfactory to the user. Otherwise the query is renegotiated, and the individual steps in the decision-making process are repeated.

Providing complete and correct answer to an information request is dependent on the decisions made in each of the steps of the reference process. Errors at any of the decision-making stage would result in an incorrect or inadequate answer. If the reference librarian misunderstands the message of the query, he or she will end up searching for the wrong information. Correctness and timeliness are the two basic components of a satisfactory answer.

5. CONCLUSION

Reference service plays an important role in satisfying the user needs and helps to maximise the use of a library. It can greatly help in meeting the objectives of a library as well as the laws of library science. The success of reference service depends greatly upon the approach and skills, with which the reference librarian handles reference queries. A systematic logical approach in handling queries helps in, better understanding of query, formulating search strategy, selection of appropriate tools and finally providing timely information with an utmost accuracy and relevancy. A reference librarian is supposed to use value judgement to evaluate the quality of information or documents as well as decide upon as to how much information would meet the information needs of the user, and what is the level of the

information required? Reference tools available at DSL are in general capable of fulfilling most of the ready reference information requirements of the users from various micro fields of S&T information inhouse only. However for exhaustive literature search requests the reference librarian has to make use of the resources of other special libraries, within and outside country. DSL has developed a rich collection of various information sources in the subject areas like laser, electronics, military science, communications, management and computer science, which provide a base for exhaustive literature search services. However, there is still a scope to build, up to the mark collection in many other subject areas like explosives, fire sciences, materials science, military technology and naval sciences and fill the gaps. As an ongoing continuous activity library is developing a balanced and live collection both in paper as well as electronic

media to fill the gaps and keeping in view ready reference as well as exhaustive literature search requirements of its users.

REFERENCES

1. Krishan Kumar. Reference service. 5th rev. ed., Vikas, New Delhi, 1996, 447p.
2. Kumar, PSC. Fundamentals of information science. S Chand, New Delhi, 1998, 363p.
3. Lambert, J and Lambert, PA. How to find information in science and technology? 2nd. ed., Library Association, London, 1991, 108p.
4. Ranganathan, SR. Reference service. 2nd. ed., Sarda Ranganathan Endowment for Library Science, Bangalore, 1989, 432p.

Following are some of the vital resources, which are used extensively at DSL to handle most of the reference queries related to Defence Science and Technology.

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Key Reference Sources on Defence Science and Technology

Paper Media

Encyclopedias

1. Encyclopedia of Arms Control and Disarmament. 3 Vol. Set.
2. Encyclopedia of Military Biography.
3. Encyclopedia of Modern war.
4. Encyclopedia of the U.S. Military.
5. Encyclopedia of World War II.
6. Illustrated Encyclopedia of Military Insignia.
7. International Military and Defence Encyclopedia, 6 Vol. Set.
8. Jane's Encyclopedia of Aviation (5 Vol. Set).
9. Military small arms of the 20th Century.

Yearbooks

1. Brassey's Defence Yearbook.
2. Conversion Survey.
3. Indian Defence Yearbook.
4. Jane's Yearbooks on various topics of Defence Science & Technology.
5. Military Balance.
6. SIPRI Yearbook.
7. SP's Military Yearbook.

Review

1. Asian Strategic Review.
2. Jane's Aviation Review.
3. Jane's Military Review.
4. Jane's Naval Review.

Handbooks

1. Complete war-games handbook.
2. Handbook of fire arms and Ballistics : Examining and interpreting forensic evidence.
3. Handbook of Model Rocketry.
4. Handbook on the peaceful settlement of disputes between states.
5. India's highest gallantry awards & the men who won them 1947-1995.
6. Nuclear non-proliferation : a reference handbook.
7. Quest for excellence : Training the Indian Army.

Index

1. Royal Military Index.

Series Publication

1. Brassey's series of publication on various topics of Defence and Military Science.

Non-Paper Media

Microforms

1. Selective Research in Microfiche (SRIM) Services.
2. Defence Science Library is subscribing currently 18 categories of SRIM series in the field of Defence and military science.

Electronic Media

CD-ROM databases

- AIAA Meeting Papers on Disc (1999+)
- Aerospace Database (1989+)
- CNS Data (PNS, ENSP, IIMP, & CISNP) (1994+)
- DOD standards (1994-98)
- FMM Middle East & Africa Forecast (1999+)
- FMM NATO & Europe Forecast (1999+)
- FMM Asia, Australia & Pacific Rim (1999+)
- Global Defence Information (GDI) (1987+)
- Historical Standards Specifications (1994-98)
- IEEE/IEE Electronic Library (1989+)
- Jane's Defence Equipment Library (1999+)
- Jane's Geopolitical Library (1998+)
- Jane's Market Intelligence Library (1998+)
- Jane's Unmanned Vehicles & Targets (1998+)
- Land & Sea-Based Electronics Forecast (1999+)
- NTIS Database (1983+)
- Patent View (Derwent) (1996+)
- Risk Report (1997+)
- Space Systems Forecast (1999+)
- Unmanned Vehicles Forecast (1999+)

- US Patent Images (1995+)
- Warships Forecast (1999+)
- World wide Standards (1994-98)

Internet Sites

Aerospace database
http://www.aiaa.org/publications/database/aerospace_database.html

AIAA Journals
<http://www.aiaa.org/publications/journals>

Armed Forces Journal International
<http://www.afji.com/>

Arms Control and Disarmament Agency, USA
<http://www.acda.gov/>

Arms Control Today
<http://www.armscontrol.org/ATC/act.html>

Aviation Week Online
<http://www.aviationweek.com/>

Aviation Weel & Space Technology
<http://www.awstonline.com/>

Bulletin of the Atomic Scientists
<http://www.bullatomsci.org/>

Bureau of Export Administration (US Deptt of Commerce)
<http://www.bxa.doc.gov>

Defence & Aerospace Directory
http://www.defence_directory.com/index.htm

Defence Daily
<http://www.defencedaily.com>

Defence News
<http://www.defencenews.com>

Defence Research & Development Organisation (India)
<http://www.drdo.com>

Defence Standards Information Centre
<http://www.dstan.mod.uk/info/htm>

Defence Technical Information Centre
<http://www.dtic.mil>

DejaNews
<http://www.search.dejanews.com>

Federal Aviation Administration
<http://www.faa.gov/>

Federal Register
http://www.nara.gov/nara/fed_reg/ddh/ddhout.html

Federation of American Scientists
<http://www.fas.org/>

Frank Case Publishers
<http://www.frankcss.com>

INSPEC
<http://www.umi.com/hp/features/inspec/>

Jane's Internet Defence Glossary
http://www.janes.com/defence/resources/defres_gloss.html

Megaterms : Military Terms and Acronyms
<http://www.vitrex.net/~bandorm/megaterm/megaterm.htm>

Military Aircraft Database
<http://www.csd.uwo.ca/~pettypi/elevon/gustin-military>

Military Ranks
<http://www.luther.bc.ca/~dave/cnv/military/military.html>

Ministry of Defence
<http://www.govt.nz/ps/min/defence/>

National Aerospace Lab
<http://www.nrl.nl>

National Technical Informal Service, USA (NTIS)
<http://www.fedworld.gov>

Office of Defence Trade Control
<http://www.pmdtc.org>

Research and Development, USA
<http://www.rand.org>

Royal Military College
<http://www.vuse.vanderbilt.edu/~abdulgai/rmc.htm>

The export Administration Regulations of the EAR
http://www.bxa.doc.gov/EAR_webpg.htm

Treaties, pacts, and Agreements
<http://www.dir.yahoo.com/Government/>

Military/Treaties_Pacts_and_Agreements/
<http://www.acda.gov/treatie2.htm>

UK Ministry of Defence
<http://www.mod.uk>

United States Information Agency
<http://www.usia.gov/>

US Department of Def. Satellite Navigation System
<http://www.ustexas.edu/dept/grg/gcraft/notes/gps/gps=j.html>