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INFORMATION EXPLOSION**Doc Inc. Penetrates Maze of Data**By CHARLES COVELL
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Washington is just beginning to overcome the effects of the "information explosion."

If the term is strange it is a comparatively new but worldwide complaint. It means simply an excess of information, from numbers, tables, equations, books, magazines and newspapers to miles of computer tape.

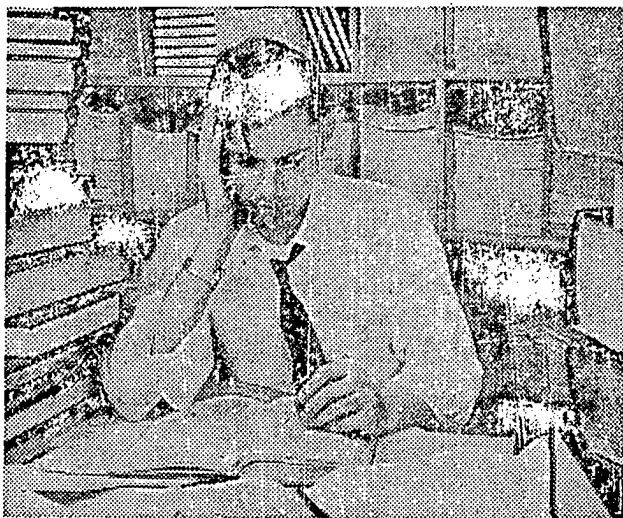
Some 35,000 recognized scientific and engineering journals published about a million research papers last year. The Commerce Department estimates 200,000 of these contained data which must be referred to again and again.

A scientist setting forth to find information in the growing maze simply doesn't know where to begin. The average professional is said to spend up to 25 percent of his time trying to keep abreast of developments in his field and still falls behind.

Inadequate data can lead to bad decisions. For example, poor information on the properties of some boron compounds led to the premature opening and subsequent closing of two chemical plants valued at \$38 million each.

Then there is duplication of effort. Probably as much as 10 percent of the nation's nearly \$15 billion annual research and development budget is said to be wasted duplicating work already completed but which has been forgotten.

Basically, the cause of the information explosion has been the great advance in science and technology since World War II. But other factors include the increased sophistication and complexity in research and



A scientist gets buried by the "information explosion."

industrialization of backward countries and the development of low-cost reproduction and duplicating methods.

Among the leaders in sorting out the confusion is the National Bureau of Standards. Last year the bureau assumed responsibility for setting up a National Standard Reference Data System to collect and disseminate data in the physical sciences. Scientists all over the country review the literature in their fields and choose the best for inclusion in the system. Data is stored on punched cards, magnetic tape, notebooks and any other convenient forms.

The recently established NBS Institute for Applied Technology also is carrying on a program to bring the fruits of science to the production line. Its Office of Technical Services serves as a clearinghouse for non-classified technical reports developed in government research.

The information explosion

Washington industry, information storage and retrieval. A pioneer is Documentation Incorporated which almost doubled its revenue from 1963 to 1964.

Doc Inc., as it prefers to be called, was founded in 1952 by Dr. Mortimer Taube who left a teaching job at the University of Chicago to set up a one-room office at 1832 Jefferson place NW. Within a year his staff had grown from three to 12 and another office had to be rented in an adjacent building.

In September, 1953, it moved to larger offices on Connecticut Avenue and in 1961, its staff by then numbering more than 80, to Bethesda. In the spring of 1963 it moved into its own six-story building which it has already outgrown. Its employees number 570, of whom more than 200 are scientists or engineers.

The company's first contract was with the Armed Services Technical Information Agency, using the UNITERM system of

information retrieval developed by Dr. Taube. Now it has extended to all fields.

Doc Inc. manages the Scientific and Technical Information Facility of the National Aeronautics and Space Administration into which thousands of scientific reports pour each day. These are sifted by experts, abstracts prepared and a journal indexing the material published periodically. Information is stored in a computer and disseminated by microfiche, a transparency only 4 inches high and 6 inches long that can carry as many as 72 pages of a manuscript.

For the seventh straight year, Doc Inc. is processing test data of drug effects on cancer for the National Institutes of Health. Data on more than 200,000 chemical compounds and natural products are stored in the computers.

In child development, Doc Inc. has a contract with the National Institute of Mental Health to study the reading abilities of a special group of students. Other contracts are in life sciences, human rehabilitation, modal logic (a branch of mathematics), library sciences and international documentation.

For Fairfax Hospital, Doc Inc. reduced a master file of patients' records to a fraction of its former size.

A recent innovation was development of a portable reader-printer in which any document appearing on its microfiche sheets can be blown up and printed in one easy operation.

Although most of its contracts have been with government agencies, Doc Inc. is now looking toward industry for further expansion. That field is almost untapped.