Historical Review

Tribology: How a word was coined 40 years ago

For centuries there was no word to describe the scientific concepts of friction, wear and lubrication. Now the entire world celebrates.

Editor’s Note: March 9, 2006, marks the 40th anniversary of the word “tribology.” Recently, the editors of TLT asked Dr. H. Peter Jost to jog his memory banks and describe the state of lubrication engineering in 1966 and how this word came to be. The following article contains the story, to the best of his recollection.
Second, only with the technical advances in production methods of recent years had attention been focused on the importance and interdependence of the constituents of this interdisciplinary subject.

Third, the term “lubrication,” used in its narrower sense, had not only prevented many people from fully appreciating the economic significance of the subject matter, it also was a misnomer for the description of the sphere of transference of force from one moving surface onto another when the surfaces were in relative motion. This occurred whether the purpose of the transfer of such forces was associated with high friction (brakes, clutches, tires) or, alternatively, with low friction (bearings, slides, etc.).

Lost for a word
There was no word in English or other known languages to describe the concept embracing these points. The chairman of the investigation, therefore, consulted the Oxford English Dictionary. The Greek word *tribos*, meaning “rubbing,” seemed to be the nearest expression covering this concept. It was known that during World War II Bowden and Tabor had established a Tribo-physics Laboratory for the Commonwealth Science & Industry Research Organization (CDSIR) in Melbourne, Australia, but this was discontinued after Bowden and Tabor returned to the Cavendish Laboratory in Cambridge, England.

After due consideration, the term ‘tribology’ (triboscience or tribotechnology) was recommended for describing the subject matter. Tribology was defined as “the science and technology of interacting surfaces in relative motion and of related subjects and practices.”

On March 9, 1966, the English government published the Working Group’s report which confirmed the prognosis that had prompted its establishment. The report found a direct link between tribology education and research and progress in industrial efficiency and development. Potential savings of £515 million per annum (in 1966 terms) were estimated for industry by better application of tribological principles and practices.

The report suggested that as a nation whose livelihood was inextricably tied to the success of its exports and its industrial efficiency, the United Kingdom could not...
afford to overlook the economic, industrial and commercial advantages to be gained by further study of tribology. The report made a number of recommendations dealing with research, education and information. It also called for the establishment of Centres or Institutes of Tribology and a handbook on tribo-design and engineering to be made available to all designers and works engineers.

**Tribology takes off**

After consideration of the report by government departments, the Rt. Hon. Anthony Wedgwood Benn, MP, then Minister of Technology, announced to the House of Commons on Aug. 11, 1966, the establishment of a committee to advise on the implementation of the recommendations contained in the report issued by the Ministry of Education and Science. The committee was to be called Committee on Tribology and composed of industrial executives, senior members from the academic and research world and department representatives.

By the end of September 1966, all preparatory work had been completed, and on Sept. 26 the Committee on Tribology was introduced at a press conference, chaired by Wedgwood Benn.

According to *Hansard*, the official procedures publication for the House of Commons, the following were included among the committee’s duties:

**Life in 1966**

*What was life like 40 years ago when the word “tribology” was first coined? These factoids might bring back a few memories.*

Lyndon B. Johnson was president of the United States. Hubert H. Humphrey was vice president.

- U.S. population: 197 million. World population: 3.4 billion.
- Life expectancy for a U.S. citizen: 70.2 years.
- Cost of a U.S. postage stamp: 5 cents.
- Supreme Court decides Miranda vs. Arizona, protecting the rights of the accused.
- FDA declares the Pill safe for human consumption.

Nobel prizes in science awarded to: Chemistry—Robert S. Mulliken (U.S.) for research on bond holding atoms together in a molecule. Physics—Alfred Kastler (France) for work on energy levels in atoms.
NBC broadcasts first episode of Star Trek. CBS backs out of scheduled airing of Psycho, deeming it too violent.


Emmy winners include The Fugitive, The Dick Van Dyke Show, Bill Cosby, Barbara Stanwyck, Mary Tyler Moore and Don Knotts.

Tony winners include Marat/Sade, Man of La Mancha, Hal Holbrook and Rosemary Harris.

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supreme achievement in the field. The Tribology Gold Medal, often referred to as Tribology's Nobel Prize, was established.

Perhaps the reason for this extraordinary development can be found in the words of Professor Hirano of Japan, the 1987 Tribology Gold Medallist, in his now famous lecture on "The Technological Progress of Tribology and its Philosophical Background." He compared the emergence of tribology as, "an all-pervading concept, a historically and culturally significant event comparable with the Industrial Revolution in the middle of the 18th Century."

If the birth of the word tribology 40 years ago is regarded as a start of life, the world can expect many benefits from tribology in areas as diverse as wealth creation, the environment, energy preservation, medical engineering and, in general, the quality of life. As we celebrate this milestone anniversary on March 9, 2006, STLE joins the world’s tribologists in wishing, "Many Happy Returns."