

# Prominent Gear Engineer

## Darle Dudley: 1917–2003

Darle Dudley, an internationally known gear engineer, of San Diego, CA, died April 11 of heart problems and a serious infection. He was 86 years old.

Mr. Dudley was known for his two gear handbooks, which were translated into French, German and Spanish. He was also known for his 19-year chairmanship of the AGMA Aerospace Gearing Committee.

Born April 8, 1917, in Salem, OR, Mr. Dudley started his career in 1940. That year, he graduated from Oregon State University with a bachelor of science degree in mechanical engineering and joined General Electric Co. in Lynn, MA.

In 1952, Mr. Dudley met Martin Hartman, starting a 51-year friendship and association. Over the years, the two men worked on several gear projects together, including work on the Apollo space program.

"Darle worked on just about every kind of gear you can think of," Hartman says.

In 1964, Mr. Dudley left GE as manager of advanced gear engineering and went to Mechanical Technology Inc. of Schenectady, NY, as manager of mechanical transmissions. In 1967, he left MTI to serve as chief of gear technology at Solar Turbines Inc. of San Diego, CA.

In 1978, he retired early and founded the gear consultancy Dudley Engineering Co. Inc. Dudley Engineering consulted with companies involved in mining, turbine, aerospace and industrial production.

"We consulted in the gear business on everything from sewage plants to satellites," says Danny F. Smith, a 15-year associate and friend.

Smith met Mr. Dudley in 1988, through the Yellow Pages. Smith was

finishing college and looking for a job—"It was a cold call." He worked for Mr. Dudley for 9 years.

"He was a brilliant man," Smith says, "but he was also kind and funny."

Today, Smith is senior principal design engineer at Solar Turbines Inc. Mr. Dudley recommended Solar Turbines, one of his former employers, to Smith.

In 1991, Mr. Dudley created a second consultancy, Dudley Technical Group Inc. of San Diego and transferred most of Dudley Engineering's assets to it. In 1997, he suffered a stroke, forcing his retirement from the gear industry.

Dudley Technical continues today in Doylestown, PA, under its new owner and president, Mr. Dudley's 25-year associate and friend, Mike Broglie.

Broglie credits Mr. Dudley with gearing knowledge as thorough as anyone he's ever met.

"It's extremely broad based in the different types of gearing that he worked on," Broglie says, "and he worked on all types of gears and all types of gear applications."

Broglie most remembers Mr. Dudley's speaking style, though. He says Mr. Dudley could convey complex ideas in simple, straightforward language.

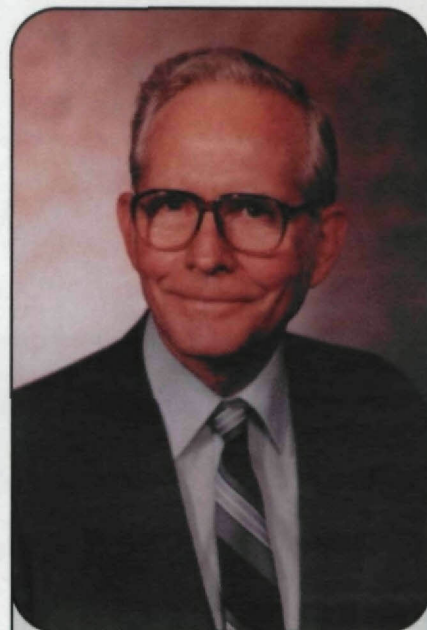
As for Mr. Dudley's writing style: "It was identical." Broglie knows; he's read all of Mr. Dudley's books and contributed to *Dudley's Gear Handbook*.

### Gear Books

Over 40 years, Mr. Dudley created four gear books.

His first book was *Practical Gear Design*. Published in 1954, the handbook was translated into French in 1958 and into German in 1961.

He then edited *Gear Handbook*, which was published in 1962. It was



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**—Martin Hartman,  
51-year friend & associate**

later translated into Spanish and published in Mexico in 1973. His next book was *The Evolution of the Gear Art*, published in 1969.

Mr. Dudley later expanded and revised his *Practical Gear Design*, which was published in 1984 with the title *Handbook of Practical Gear Design*. In 1994, it was republished.

In 1991, his *Gear Handbook* was published as a revised second edition and retitled *Dudley's Gear Handbook*. The 1991 edition was edited by Dennis P. Townsend, president of Townsend



Engineering of Westlake, OH.

Townsend views Mr. Dudley's writings as his greatest contribution to the gear industry, particularly Mr. Dudley's two handbooks: "They're used by just about everyone in the gear industry."

#### Awards

Mr. Dudley received six awards during his gear career, including three awards from European organizations.

In 1958, he received the AGMA's

Edward P. Connell Award, given to people who have provided outstanding service to the gear industry. In 1966, he received the Golden Gear Award from *Power Transmission Design* for outstanding contributions to the gear art.

In 1977, Mr. Dudley received the Medaille D'Argent from the French Institute of Gears and Gear Transmissions for America's contributions to the global advancement of the

gear art. In 1979, he was awarded the Worcester Reed Warner Medal from ASME for his engineering contributions to gears.

In 1986, he received a second award, the Medaille D'Or, from the French Institute of Gears and Gear Transmissions. In 1994, he received the Ernst Blickle Award from SEW-Eurodrive-Siftung of Bruchsal, Germany.

#### Chairmanships

Besides the aerospace gearing committee, Mr. Dudley was a founder and the first chairman of the AGMA Vehicle Gearing Committee. He founded and was first chairman of the Gear Technical Committee of the International Federation for the Theory of Machines and Mechanisms (IFTToMM). He also was chairman of the ASME Research Needs Task Force for Gearing and was a member of the ASME Gear Research Institute.

#### Association Memberships

Mr. Dudley was a member of the American Gear Manufacturers Association (AGMA), the American Society of Mechanical Engineers (ASME, now ASME International), the ASME Gear Research Institute and of IFTToMM.

He also was an honorary member of Verein Deutscher Ingenieure (VDI), an association of German engineers.

Mr. Dudley is survived by his wife, Dorothy; daughter, Cheryl Davis; son Curtis Dudley; stepson Robert Burson; sister, Dorine Wenger; nine grandchildren; and two great-grandchildren.

"As a human, he was gentleman; as a gear engineer, there was no peer," Hartman says. "I don't think we're going to replace him." ⚙

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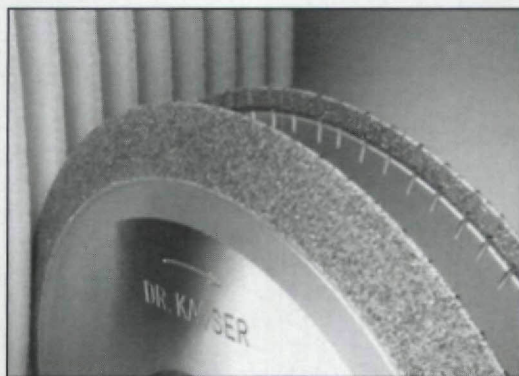
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