1953 American Aviation cover story identifies helicopter "pioneers" Charles Kaman, Glidden Doman, Igor Sikorsky, Stanley Hiller, and Frank Piasecki
God takes care of helicopters.

Igor Sikorsky
INTRODUCTION
In 1943, a 22-year-old engineer named Glidden Doman learned that a Sikorsky helicopter had broken a blade during a delivery flight. Helicopters were needed in the War effort, but their rotor blade life was unsatisfactory. The infant helicopter industry barely understood rotor dynamics.

Doman took a job at Sikorsky and, with intensive experimentation and flight testing throughout the War, made considerable improvements in the helicopters’ blade life.
He didn’t find all the answers right then, but became intrigued by questions no one else was asking.

In 1945 he left Sikorsky and founded his own firm to pursue them.
Doman Helicopters began work in a Connecticut cow pasture. Over the next 24 years, it won contracts with the U.S. Army and Navy and drew potential commercial customers on four continents.

The company constantly innovated solutions decades earlier than larger competitors. Some of these ideas are now standard in helicopter technology.

Some, arguably, still await widespread adoption.
The driving force behind Doman engineering was sharp focus on understanding what the helicopter and especially its blades and rotor hub were doing.

The resulting insights produced the firm’s hallmark trait – aeronautic design with almost elegant simplicity.
The complex Sikorsky rotor from the Sikorsky R–6 helicopter
The elegant and simpler Doman rotor (LZ–5)
The "Always Balanced All Ways" Doman logo was used in the earliest efforts to explain the rotor fundamentals in various publicity situations.
Artist drawing of first Doman helicopter concept, the LZ–1, which was never built. Somebody called this design the “Little Zipper” which initiated use of the letters LZ in subsequent model numbers. Picture and article in published by *Aviation Week*, July 1946.
THE DOMAN R–6 / LZ–2

Doman Conversion of the Sikorsky R–6
In 1946, the firm acquired a Sikorsky Army R–6 and replaced its rotor with the first Doman rotor design.

This became the prototype LZ–2
An early flight of the LZ-2/R-6 at Stratford, Connecticut. Its first flight was in August, 1947.
The basics of the Doman rotor – Diagram used by Dr. Alexander Klemin, Dean of the Guggenheim School Aeronautics, New York University, published by Dr. Klemin in Aero Digest, circa 1948. Also published in Aviation Week, January 26, 1948.
The company moved to Danbury, Connecticut, in October 1948.
THE LZ–4
(CW–40)

The Curtiss–Wright Years
1949–51
Doman Helicopters entered into a partnership with the Curtis–Wright Corporation, at the time one of the preeminent companies in the aviation industry. The result was the first Doman helicopter designed and built from scratch, the LZ–4, also known as the CW–40.

One helicopter was built and test flown but never went into production. Many of its design features were later incorporated into the Doman LZ–5.
Glid Doman, showing interior capacity of the LZ 4.
Published in *Aviation Week*, January 7, 1952
THE LZ-5

(ARMY YH-31)

1951–1960+
After Curtis–Wright terminated the LZ–4 arrangement, Doman designed a new model, the LZ–5, also called the YH–31 (the U.S. Army designation).

Three LZ–5s were built, flight tested and FAA certificated.
LZ–5 mockup with stretchers for showing to U.S. Army Medical Corps.
Picture and article published in Aviation Week, January 7, 1952
LZ–5 mockup in a New York Department store
Cutaway drawing of LZ–5 rotor head assembly before adopting the servo system that was built into the swash plate.

Published in Aviation Week, March 9, 1953
Another rotor comparison (much later) – The complex Sikorsky S–58 versus the simpler Doman LZ–5
First flight with eight people aboard, LZ-5
LZ–5  ships #1 and #2 – Only photo of both ships together
Doman Employees who had been present at the Army contract signing, line up to see LZ-5 Ship 1 depart on its delivery flight to Fort Rucker, Alabama, for Army testing.
LZ–5 on Pentagon stopover on the way to Fort Rucker – General Paul Yount, Chief of Army Transportation takes a ride. He championed Doman technology for years.
Doman Helicopters hosts an American Helicopter Society banquet in a Danbury, CT, hotel, in 1953. Joan Doman (wife of Glid) seated on the speaker’s right. Igor Sikorsky seated on her right.
Another Doman-Sponsored American Helicopter Society dinner with the legendary Anton Flettner showing movies of his helicopters in production two years before Sikorsky. This side of Flettner is Commander Frank Erickson, noted pioneer in the use of helicopters for rescue.
Army General Paul Yount sought to maintain the Doman work by funding research on a light observation helicopter (LOH), including preliminary design work and spec writing for the LOH.
Kaiser–Fleetwings KD–161 Doman and (Henry J.) Kaiser Fleetwings Corp. entered this design in the Army LOH contest.
Doman–Fleet, Ltd: 1954 – 1957

Seeking a way around U.S. Air Force obstacles, Doman teamed up with Fleet Manufacturing Ltd., a major Canadian aviation firm based in Ft. Erie, Ontario.

Pursuing both military and commercial business, Doman–Fleet built a third LZ–5 in Ontario. It was simultaneously FAA certificated in the U.S. and certificated in Canada on December 30, 1955.
LZ–5 ship 3 (with Canadian registration CF–IBG) was demonstrated in Toronto, Montreal, and Quebec. This may have been the first helicopter ever built in Canada. If not, it must have been close to the first
LZ-5 Ship 3 hauling a Volkswagen convertible in Danbury, CT

Seeking Commercial and Foreign Business
Fleet itself hit financial setbacks that ended the Doman collaboration in 1957. Doman began seeking contingent contracts with commercial buyers and pursuing a joint venture in Italy and later Puerto Rico. It also diversified beyond helicopters, adapting to keep the doors open.
LZ–5 ship 3 at Paris air show, 1960. (This is the same aircraft that had been registered in Canada as CF–IBG. By 1960 it was owned by Doman Helicopters and was re–registered in U.S. as N812)
Angelo Ambrosini news conference in Palermo, Sicily, Italy, in 1961, announcing plans to produce the LZ–5 in Sicily. Ambrosini was one of world’s first aero engineers, schooled in Paris with Igor Sikorsky
Unable to raise sufficient capital to put into production the LZ–5 or one of its later proposed variants, Doman Helicopters was forced to close in December, 1969, after 24 years of pioneering.

Glid Doman went to work for the Boeing Vertol Helicopter Company, on the design of rotors for the “Heavy Lift Helicopter” and other rotor research.
AFTER HELICOPTERS
After 30 years in the helicopter world, Glid Doman turned his rotor knowledge from flight to wind energy in 1974, with breakthrough concepts in wind turbine design.
For some 30 more years, he led the design evolution of wind turbines for major manufacturers on two continents, including United Technologies, Boeing, and Aeritalia.
In 2010, at the age of 89, he lives in Granby, Connecticut and is still innovating.