MORE ABOUT IGOR BENSEN

Igor Bensen founded the Popular Rotorcraft Association (PRA) in 1962. Most don’t realize that PRA was founded as was their magazine, or journal, as an advertising medium for Bensen to sell his gyrocopter. This is much as what the National Geographic Society does with its magazine. If you want to buy the National Geographic magazine your payment becomes “dues” for joining the National Geographic Society. Bensen did the same. If you look at the original PRA magazines they were essentially two and three page flyers for selling the autogyro variants such as the B6, B7, and finally the B8 and B8-M. The PRA is now the non-profit interest group for owners and homebuilders of autogyros and helicopters, based in Mentone, Indiana.

Igor Bensen, born in 1917, was the son of a Russian agricultural scientist, Basil Mitrophan and Alexandra P. Bensen. His father was posted to Czechoslovakia in 1917 at the beginning of the Russian Revolution while the rest of the family remained behind. The Russian civil war lead to harsh times, and the Bensen family was soon reunited in Prague, far from the turmoil. At 17 Bensen was sent to the University of Louvain in Belgium, from which he received a B.S. degree.

Bensen accepted a scholarship from the Stevens Institute in New Jersey in 1937 to study mechanical engineering, graduating with honors in 1940. As an alien Bensen had been forced to turn down a job offer to work for Igor Sikorsky, and his first job was as an engineer with General Electric at the age of 23. General Electric executives took notice of Bensen's interest and assigned the young engineer to the company's helicopter development efforts.

While working on the project, Bensen flew a salvaged Kellett XR-3 in 1943, and eventually gained almost exclusive use of the surplus Autogiro. Bensen became a highly skilled Autogiro pilot, and gained a deep understanding of the dynamics and theory of autorotational flight. The USAAF (United States Army Air Force – actually the Air Corps) had received some of the recovered FA-330 rotary kites and were experimenting with pilot George Townson, as well as a Hafner Rotachute and Bensen asked his boss to acquire the Rotachute for evaluation. The military agreed to loan the Rotachute providing that General Electric agreed not to fly it.

Bensen ignored the military's requirements and personally flew the Rotachute in tow, and launched it from the bomb rack of the XR-3. Those tests lead to the Bensen B-1, an amateur-built 120 lb giro-glider capable of carrying a 300 lb load, differing from the Rotachute with the addition of nose and tail wheels, a semi-rigid rotor in place of the Rotachute's individual flapping rotor blades, and a control stick 'reverser' to allow more effective direct-control of the rotor. The crash of the B-1 led directly to the B-2 which was of an all-metal construction. The B-2 lead to the G-E Gyro-Glider in November, 1946 but little came of the G-E model. And subsequently in Schenectady, the Helicraft Equipment Company developed a 60 lb variant of the Rotachute called the Heli-glider in 1949. An extremely simple design that flew with a 14 ft rotor that achieved 550 rpm, the lack of weight made it difficult to fly with an overhead stick control, and the project was soon abandoned.

Bensen, now firmly committed to rotary flight development, joined Kaman Aircraft in 1951 where he organized and directed the research department and flew Air Force and Navy helicopters. After two years, borrowing money from his brother, Bensen left to found his own company in Raleigh, North Carolina.

In 1953 Bensen Aircraft Corporation introduced the B-5 Gyro-Glider, a single-seat rotary-kite towed in back of a vehicle and deriving its lift from an unpowered rotor. It featured a light tubular aluminum frame resembling a cross with two pieces, a longer keel crossed by a shorter perpendicular section. A lightweight aluminum-frame web set was attached to both the keel and a reinforced metal mast extending upward from the keel. Control was initially achieved with a hanging stick control attached directly to the rotor hub that was positioned on top of the mast with a two-blade rotor. A nose wheel was attached directly to the front of the keel while landing wheels were affixed to each.
end of the perpendicular crosspiece. The keel, in back of he seat and mast, carried a plywood fin and rudder much as had the Rotachute. It flew well when towed by even a small automobile and did not require any license, and was relatively safe. It was also distinguished by ease of construction and the builder could either purchase a kit or build from plans. The materials were readily obtained and fabrication could be completed by the moderately skilled in 3-4 weeks. It would become the home-built B-6, and the prototype was accepted into the Smithsonian's NASM on July 22, 1965.

Bensen subsequently developed a Reynolds aluminum prototype, the B-7 Gyro-glider which flew on June 17, 1955. From B-7 came the B-7M (for motorized) which first flew on December 6,1955 with Bensen as pilot and Charles "Charlie" Elrod and Tim Johnson as ground crew. It weighed 188 lb. as the airframe was made of rounded aluminum tubing and had a wooden propeller attached to a 42 hp Nelson two-stroke engine, with the wooden rotor attached to a spindle type tilting head cyclic pitch rotor with a hanging control stick. Bensen called his Rotachute-derived creation a Gyrocopter, a term he subsequently trademarked. After three days of successful flight testing the B-7M crashed as its pressurized fuel tank failed. Bensen, a highly experienced Autogiro pilot, set the aircraft down in woods adjacent to his NC factory. He later ascribed the safe landing to "much luck and the good Lord's will." The B-7M, rebuilt in three days, was flying by December 17, 1955, a particularly moving experience for Bensen as that was the 52nd anniversary of the Wright brothers first powered flight. Bensen relentlessly analyzed the flight performance of the B-7M, particularly those factors that had led to the accident, and the result was an improved control linkage to the rotor head.

The subsequent B-8M model, incorporating the improvements developed and tested in the B-7M, powered by a more powerful 72 hp McCulloch two-stroke piston engine that had been used on drones for the military, was placed into production in 1957 and became the most produced and copied aircraft Benson B8Mdesigned in history and provided, in kit form and plan-built, the most popular way to fly. The "Spirit of Kitty Hawk", a B-8M Gyrocopter in which Benson had personally duplicated the Wright brothers historic first flight at Kitty Hawk on December 17, 1966, and with which he had set twelve world and national Gyrocopter speed, distance and altitude records between May 1967 and June 1968, was accepted into the Smithsonian Institution aviation collection on May 14, 1969. The Bensen, and its variants and local adaptation was to dominate the American Gyrocopter movement for almost twenty-five years.

Some of the above is an excerpt from Dr. Bruce H. Charnov’s informative book From Autogiro to Gyroplane. Other text and photos are not from his book but from Google searches and from the Groen Brothers Aviation Website on the history of the gyro -- http://www.groenbros.com/history.php

Bensen used his Popular Rotorcraft Association with its magazine to sell his gyrocopter. He also pushed for a “gyro in every garage” and advertised in many popular magazines such as Mechanix Illustrated and Popular Mechanics. Here is a sample of one of his ads:

In the 1950s Bensen Aircraft Corporation exploded upon the sport aviation scene with their ground-breaking "Gyrocopters" and "Gyrogliders." When the brilliant engineer behind this success, Dr. Igor Bensen, introduced the B-7 Gyroglider (1955), its unprecedented simplicity of design and ease of flight captured the public's imagination. Although the B-7 had no engine and was towed into the air very much like a kite, shortly thereafter the engine-powered B-7M Gyrocopter was introduced and a new age of powered homebuilt aircraft dawned. Dr. Bensen's revolutionary designs have been copied and modified, but, in the opinion of many, never surpassed.
The Bensen Aircraft Corporation was established by Dr Igor Bensen at Raleigh-Durham International Airport in North Carolina in 1952 to develop and market a variety of helicopters and autogyros of Bensen's own design.

The most successful product was the Bensen B-8 that first flew in 1955 and remained in production until the company closed down in 1987.

**SPECIFICATIONS OF THE B-8M GYROCOPTER**

- Height: 6½ ft
- Length: 11 ft
- Empty Weight: 250 lbs
- Gross Weight: 550 lbs
- Payload Weight: 300 lbs
- Rotor Diameter: 20½ ft
- Disc Loading (lbs/sq ft): 1.6
- Engine (original): McCulloch 4318
- Horsepower Range: 65 to 90
- Maximum Speed: 95 mph

Some may ask about the reason for focusing on Bensen when now there are all these fancy gyroplanes?

*“Never forget the importance of history. To know nothing of what happened before you took your place on earth, is to remain a child forever and ever.”*

Igor Bensen’s gyrocopters were the focus of gyroplane history from the early 1950s until the late 1970s. When his company closed, Ken Brock, the Bensen salesman on the West Coast, took over the lead with his KB series of gyros which were then the leading gyros until the many seeds planted by Bensen took root and led to the dozens of gyro types, some of which grew, and others died after being around for just a few years.