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# The AMA History Project Presents: Biography of BEN (BENNY) SHERESHAW



March 23, 1913 – May 12, 2009      Began modeling in 1926  
AMA #176457

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Written & Submitted by CR (05/2001); Transcribed by NR (06/2001); Edited & Formatted by SS (10/2002); Updated by JS (10/2008), (11/2008), (05/2012)

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## Career:

- Ben's first model design, the *Speedster*, was kitted by Loutrel and was the first model design to be produced as a kit in the U.S.
- 1936: Designed the popular Cavalier produced by Berkeley Models
- 1938: Designed the popular Commodore model produced by Scientific Models
- 1937: Designed and produced the first Bantam .16 engine
- 1939: Came out with the .19 Bantam engine
- 1942: Designed the Bantam twin (3.25-cubic inch) engine for the war department's experimental prototype model projects
- Created the early version of our present day glow plug
- 1960s: Designed the Bantam .60 engine prototype
- 1993: Created his first Bantam 2.6-cubic inch engine; it was never produced

## Honors:

- 1980: Model Aviation Hall of Fame
- 1980: National Free Flight Society Hall of Fame
- 1990: Society of Antique Modelers Hall of Fame
- 2000: Kits and Plans Antiquitous Hall of Fame

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*The following biography of Ben Shereshaw was compiled and written by Charlie Reich.*

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## The Biography of Ben Shereshaw

By Charlie Reich

*Ben Shereshaw is a true pioneer of the model airplane industry. This biography was written in January of 2001 with Ben at 88 years of age. There has been little written about this man considering his myriad of accomplishments over the years. Most of the following information was derived from phone call interviews with Ben, and during those calls, it quickly became apparent that Ben was a gentleman of the highest order and a delight to talk with. He is modest to a point so it was difficult to get him to talk about himself unless you could relate to a known design of his, a product he manufactured or a deed he accomplished, only then would he elaborate at length – and in great detail – remembering products, names, places and dates. That in itself is a great achievement at age 88. Once our conversation warmed and turned to modeling, it quickly became apparent that Ben was a living legend, a walking encyclopedia of modeling history in its golden years, and Ben Shereshaw was one of the greats that made it all happen.*

*- Charlie Reich*

Ben Shereshaw was born on March 23, 1913 in the Bronx area of New York City. Ben recalls walking through Central Park at about 13 years of age when he spotted a V-shaped model being pushed by rubber band powered twin propellers flying overhead. He was immediately smitten

with a disease, an incurable disease – model airplane fever. Fortunately for modelers the world over, this disease became a lifelong affliction.

Ben started building his first rubber-powered model shortly after his first model airplane encounter in Central Park. Throughout his high school years, Ben continued to build model airplanes, read about them, and study them. Interest in aviation was always foremost in Ben's young mind and after his graduation from high school; he entered the Guggenheim School of Aeronautical Engineering.

### **The First Gas Model Kit**

In 1934, Ben acquired a new Loutrel engine and designed his first gas model around it. He named it the *Speedster*. The Loutrel Specialty Company in Brooklyn purchased Ben's design and offered the new Loutrel *Speedster* for sale in a kit form.

This was the first gas model in kit form to be sold in the U.S., and was the first of many of Ben Shereshaw's firsts in the modeling industry. Ben also used a bent piano wire landing gear in his *Speedster* design. Ben advised, “This was one of the first piano wire landing gears to be used on a gas model airplane” – another first for Ben and the modeling world.

This was only the start of Ben Shereshaw's lifetime model aviation career.

### **The Model Designs**

Ben held several jobs and wore many different hats during the pre-World War II period. The depression years were difficult for young Ben, no jobs to be found, money scarce and yet the model industry beckoned to him. He realized that during those depression years, under the Herbert Hoover administration, there was a tremendous dollar volume of business being done in the model airplane industry, much more so than in full-scale aircraft. This trend did not change until Franklin Roosevelt became president and preparations started underway for the U.S.'s involvement in World War II.

After graduation from Guggenheim, Ben started designing gas models almost full time. From 1937 through 1940, Ben is credited with over 20 different gas model designs. Some plans were sold to *Flying Aces* or *Model Aviation* magazine. In addition to the plans, Ben would submit detailed building articles. Four of Ben's designs were kitted by the Scientific Model Company. Ben also compiled miscellaneous model airplane articles for various trade magazines.

All of the Ben Shereshaw designs contained a dihedral wing and most all designs resembled a real airplane. Ben did not design any models with a polyhedral wing.

Ben's first gas model, designed in 1934, was the prototype for the Loutrel *Speedster*. This was a very stable, good flying model and Ben's favorite test bed. A few modifications were made over the years and reappeared once again on a fresh drawn plan renamed as the *Pioneer* in the 1938 issue of *Flying Aces* magazine.

The 1934 Loutrel *Speedster* had the wing mounted on cabane struts, as were the *Miss Exchange Club*, *Pioneer* and *Privateer*; all others were of a cabin design with the one exception of the 1940 Scientific-kitted *Ensign*, which was a pylon mounted wing.

The 1934 Loutrel *Speedster* was the first gas model offered in kit form in the U.S. The Loutrel *Speedster* kit sold by the Loutrel Specialty Company in Brooklyn, New York, featured a seven-foot wingspan and was designed especially for the 1/6-horsepower Loutrel Aero Motor. The complete Loutrel *Speedster* kit, less motor, could be purchased for \$8 or the separate plan only was \$1.

The Scientific *Eaglet* kit was one of the first class A kits to be offered in June 1938. Ben Shereshaw specifically designed the *Eaglet* for use with his new Bantam Class A engine.

The 1940 *RC-1* (twin boom) was the first radio-controlled gas model offered in kit form. (This model is not to be confused with the 1934 Chet Lanzo designed *RC-1* model of the same name.)

### Ben Shereshaw Designs in Chronological Order

Model	Source	Year	Wingspan	Sq. Inches
Loutrel <i>Speedster</i>	Loutrel kit	1934	84-inches	
<i>Cavalier 100</i>	Berkeley kit	1936	100	1431
<i>Champion</i>	<i>Flying Aces</i>	April 1937	108	1427
<i>Nimbus</i>	<i>Model Airplane News</i>	June 1937	123	1775
<i>Cumulus</i>	<i>Flying Aces</i>	Sept. 1937	96	1178
<i>XP-1</i> Twin Boom	Zaic	1937	114	970
<i>XP-2</i> Twin Boom	<i>Flying Aces</i>	Oct. 1937	93	1052
<i>XP-3</i> Twin Boom	Zaic	1937	93	1052
<i>Cloud Cruiser</i>	<i>Flying Aces</i>	Nov. 1937	96	1186
<i>Cavalier 110</i>	<i>Frank Zaic Yearbook</i>	1937	110	1311
<i>Cavalier Custom</i>	Berkeley kit	1937	108	1294
<i>Eaglet</i>	<i>Arpiem</i> magazine	Dec. 1937	72	748
<i>Cavalier Custom Twin*</i>	Berkeley kit	1938	108	1298
<i>Cavalier Standard</i>	Berkeley kit	1938	72	582
<i>Pioneer</i>	<i>Flying Aces</i>	Jan. 1938 (1934 design)	80	864
<i>Eaglet</i> (Class A)**	Scientific kit	June 1938	44	290
<i>Cadet</i>	<i>Flying Aces</i>	Sept. 1938	87	940
<i>Miss Exchange Club</i>	<i>Flying Aces</i>	Nov. 1938	48	370
<i>Commodore</i>	Scientific kit	1938	72	749
<i>Cavalier 60</i>	Berkeley kit	1939	60	432
<i>Sportster</i>	<i>Air Trails</i>	March 1939	46	345
<i>Privateer</i>	<i>Air Trails</i>	Sept. 1939	44	344
<i>Mercury</i>	Scientific kit	1939 (designed in 1938)	72	720

<i>RC-1 (Twin Boom)</i> ***	<i>Air Trails</i>	1940	120	
<i>Ensign</i> ****	Scientific kit	1940	50	372

\* The *Cavalier* Custom Twin kit could be built as single engine or twin engine, single rudder or twin rudder or with any mix and match thereof.

\*\* The 1938 Scientific *Eaglet* kit was one of the first class A kits to be offered in the market. The 44-inch wingspan *Eaglet* was designed by Ben Shereshaw for use with his new Bantam class A engine.

\*\*\* The first Radio Control model to be offered in kit form by Cecil Winik in 1941.

\*\*\*\* The only pylon model designed by Ben Shereshaw.

### **Ben's Career**

Ben was formally educated as an engineer. His active mind kept him busy at many tasks as an inventor, a designer, and a dreamer of things to come. The ability and energy to achieve his ideas came deep from within and Ben was not afraid to try new and innovative things. To create gas model airplanes was a part of his dream and soon thereafter, an idea evolved to create a smaller gas model engine – a miniature jewel of beauty, precision, and performance.

He loved the energy, enthusiasm, and mechanical knowledge that seemed to be a natural born instinct among the young people of his era. All the young men seemed to have a built-in understanding of things mechanical and what made them work, or at least the curiosity and desire to learn about such things. Automobiles and airplanes were still in an embryonic stage bursting forth with new styles, designs, and modern innovations for the times. Henry Ford, Thomas Edison, and Harry Firestone were still continuing in their achievements of inventing new and innovative products, which offered inspiration to the youth of America to aspire to the seemingly boundless possibilities that lay before them. The ability for the automobile to attain 100 mph speeds was commonplace as were airplanes that could travel twice that speed and submarines that could travel across the ocean underwater. Comic books featured Buck Rogers and his Space Cadets with rocket ships flying in outer space, all giving young and old alike dreams of things to come in those exciting times.

In 1937, Ben started designing models and writing magazine articles almost full-time and soon became aware of the need for a smaller gas model airplane, one that a young man could easily carry on a bus or the subway to the flying field, and of course, this would require a small, powerful, yet very lightweight model airplane motor. He planned to develop a small model airplane engine in addition to a matching, well-designed excellent flying class A model.

With the plan in mind to develop a miniaturized gas model engine, Ben set up a small machine shop in his living room, much to his wife's consternation, consisting of a small lathe and drill press. He started teaching himself to become a machinist. As his skills progressed, he was soon mandated to move his machine shop equipment to the basement workshop.

### **The Bantam Engine**

Emerging from the depths of his basement workshop in late 1937 or early 1938, Ben Shereshaw carried his all-new Bantam .16 engine prototype. The engine had a sand cast aluminum crankcase

with a matte finish, four round holes for exhaust, piston with rings, a knurled aluminum gas tank bowl, a closed ignition timer, horizontal head fins, and seven cylinder fins.

Ben Shereshaw soon realized that he had a winner with his new Bantam .16. It was an engine that would create a tremendous sales opportunity in the modeling industry, and he recognized the opportunity that lay before him.

News of the forthcoming all-new Bantam .16 was leaked out in promotional ads starting in mid-year 1938 in various modeling magazines and trade papers. Production was started in late 1938.

Further development offered enhancements to the 1939 Bantam .16; with 2 round holes for exhaust, more head fins, and 10 cylinder fins. The crankcase and timer housing was machined smooth and polished and a new clear plastic fuel tank was added. Encouraged by the immediate success and acceptance of his new Bantam .16, Ben immediately sat down and started designing a successor with a unique and innovative style. One that would utilize a die cast crankcase to enable a speed up in the production process and enable them to supply the anticipated demand. He was aware the sand cast aluminum crankcase was too heavy for an engine of this diminutive size. His mind ablaze with ideas for his new design the midnight oil started burning once again.

Ben's new Bantam design offered a displacement of .19 cubic inches. A rotary disc valve was used for fuel induction, offering a turbo-like boost to performance. To reduce the overall weight a die cast magnesium crankcase would be used along with a lapped piston. The magnificent styling would embellish the art deco design of that period offering beautiful form with innovative function, providing an all-new class A engine with outstanding performance.

A substantial investment would be required to start production of the new Bantam .19 and money was a scarce commodity as the nation was still under recovery from the depression. Ben realized he would also need to have a facility to manufacture the necessary production, but first and foremost, the new magnesium crankcase would require a set of professionally made casting dies, an expensive item indeed.

Ben scheduled a meeting with the Aluminum Company of America (ALCOA) executives to discuss his needs and get a cost estimate for them to produce the dies. They advised the total expense to be between \$1,000 and \$1,100, more money than Ben had ever seen at one time in his life. Much to Ben's amazement the ALCOA executive staff was very interested in his new product and felt it would generate a great demand.

Unknown to Ben, the ALCOA company policy promoted helping young and ambitious entrepreneurs to be established in business. ALCOA offered to supply Ben with the dies, which could be paid for in monthly installment payments. This was a rarely encountered way of doing business in those days. The deal was struck, and the dies went into a production schedule that very day.

Additionally ALCOA submitted a major news article about the new engine and their involvement in making the special dies in their international trade paper. This gave worldwide recognition and awareness to Ben Shereshaw's forthcoming new and innovative Bantam .19 engine.

Ben also had a full-time job teaching mechanical drawing at Central High School in Newark, New Jersey. This was a busy period in Ben's life as he continued to design model airplanes and write magazine articles plus develop a new model airplane engine and set up a new manufacturing plant to produce the new engines. All this was in addition to his full time teaching job at Central High.

The new manufacturing facility was called Miniature Motors Company located at 362 High Street in Nutley, New Jersey. Ben had great faith and confidence in the ability of young people during that era. His plant employees were mostly all his modeling acquaintances or recent high school graduates, who all turned out to be very enthusiastic about learning the machine shop trade. Ben said, "They took to that work like a duck takes to water. Somehow they seemed to possess an inner knowledge of what needed to be done and how to do it with very little supervision or instruction. They were model – no pun intended – employees."

Magnesium was the material of choice for the crankcases, however due to the preparations for the forthcoming war effort, the material was in short supply, and aluminum was sometimes substituted in a production run. Pre-war Bantams were specified to be manufactured with magnesium, however a few were aluminum.

During this time, the AMA was aware of the smaller planes and engines emerging in the hobby. A committee was formed to set up new classes and standards for all model engines and their sizes. The new AMA rules proposal was approved by the NAA at their annual meeting. It was official; the new class A allowed engines up to .20 displacement, class B was .201 to .300 and class C at .301 and up. By sheer coincidence, Ben had just introduced his new Bantam .19 and realized that his timing was perfect as he now had a major jump on the market place with his exclusive .19 size engine. Other manufacturers would take months in development to see production of their new class A engines.

The introduction of the all-new Bantam was a huge success with over 70,000 Bantam .19s sold in the first year of production.

The competitive Ohlsson .19 did not arrive until late 1939 followed by the Arden .19 in mid 1940. Others soon jumped into the melee of supplying the new and very popular class A .19-sized engines. The popular Bantam .19 continued to lead the pack in sales.

### **Ben Shereshaw at the 1938 Nationals**

In 1938 the eleventh annual Nationals (Nats) was held in Detroit, Michigan from July 6 through 9 at the Wayne County Airport with an excited young man, Ben Shereshaw (age 24), in attendance. The following is one of his many stories about the Nats.

"The Nats drew huge crowds in those days. Over 1,000 contestants came from all over to fly. Mostly rubber power and gliders as only a few flew 'gassies' due to the expense. This was the depression era, nobody had any money, and decent jobs were few or none. Times were tough. The 20-story Hotel Fort Shelby was the headquarters for all the contestants. The hotel offered a special rate of \$8 for the length of the entire event."

The following Hotel Fort Shelby's ad was the modelers' enticement:

“Going to the Nationals? Then make your stay a pleasant one! The Hotel Fort Shelby is the official headquarters for the Eleventh Annual Model Airplane Championship Meet. Model leaders and leading modelers will convene to provide an atmosphere of swift aeronautical tempo. Your reservation at the Shelby is your front-row ticket to the greatest model aviation jubilee of the year. For modelers, there are special reasonable rates. Spacious workrooms provided, with microfilm tanks. Also storage for shipping cases. Write today!”

Ben said, “My stay there was unforgettable. Can you imagine over 1,000 young modelers crammed into this facility? The engines were being tuned and running full blast in the rooms and hallways all night long, every night. Model repairs were also underway all night long with nitrate dope and Ambroid cement fumes permeating the air. The exhaust fumes and smoke was so thick you could not breathe. It was awful as nobody got any sleep.”

A 1938, *Arpiem* magazine article reported that Ben Shereshaw rented out his bathtub as a sleeping facility to a budget-minded contestant, Felix (Gilbert) Gutman, in the Shelby for 50-cents a night. Ben's response to the article was this:

He laughed and replied, “How did you find out about that? ... Yes I did. As I said, money was scarce in those days. The other fellows found out about my lucrative deal and hung a sign on my door, ‘Sleeping Space for rent 50-cents a night.’ The fact was, all rooms were crammed with sleeping bodies and the fellows sharing the room expense. Those were the fun days, lots of fun and pranks. Oh for the exuberance and innocence of our youth...”

### **Bantam's Winners at the Nats**

Ben took his Bantam .16 to the 1939 Nationals and won the newly formed class A event. Ben smiled when he said, “It was a fairly easy win; I didn't have much competition.”

The new Bantam .19 took the 1940 newly formed class A Nats event with a storm winning first, second, fourth, fifth, seventh and 10th in the senior class A events.

The Bantam .19 continued bringing home the gold in 1941 and the post World War II at the 1946 Nats. It was a winning engine in Free Flight as well as Control Line events in every local and major contest entered for many, many years.

### **Ben Shereshaw's Radio Control Theory**

Ben claims that Radio Control for flying models was invented because of automobile running boards.

“Since the early days of Free Flight the modelers would ride outside the car on the running board while chasing their flyaway model,” he said. “They would shout instructions through the open window to tell the driver what direction the model was going and hang on for dear life while the chase ensued. This was the radar tracking and retrieval of the 1930s.”

“In 1937, most automobile designs were modernized and the running boards were no longer hung on the outside of the body,” he said with a laugh. “It was more than a coincidence that Radio Control was introduced at that time, in fact they had to introduce Radio Control as there was no longer a convenient way to chase the models in the modernized automobile.”

Ben also felt that the early Radio Control models were controlled telepathically and said, “No one knew how the radios worked, and no one really knew how to use them. The early Radio Control models were launched as a Free Flight and hopefully continued to fly well as a Free Flight. When the model got too far away for comfort the radio was twiddled with in hopes the model could be guided back to a near proximity of the flying field. Surprisingly, most of them were successfully steered back to the takeoff point, and this had to be done by telepathic insight, as none of us really knew how to guide that thing. After all, we were really Free Flyers.”

### ***RC-1: Ben Shereshaw's First Radio Control Model***

“In 1937, I started experimenting with a large twin boom, pusher engine, model called the *XP-1*,” Ben said. “This original design eventually evolved into a nice flying Free Flight called the *XP-3*. The building and flying of the *XP-3* [experimental pusher] provided the gas modeler with a design incorporating structural and aerodynamic characteristics far different from those found in conventional gas models. In the development of the unique design many problems were encountered necessitating the construction of three different models-the *XP-1*, *XP-2* and *XP-3* before the ‘bugs’ were eliminated.

“The difficulties of the design were thoroughly ironed out with the construction of the *XP-3*. Most notable the take off run being substantially decreased from previous designs, while the trim of the model remained almost constant after the engine had stopped.”

In 1939, Clinton DeSoto, one of the early Radio Control pioneers who was a staff member of the American Radio Relay League (the AMA of ham radio) encouraged Ben to design a twin boom pusher for Radio Control to be used at the Nats. Clinton agreed to furnish the Radio Control equipment if Ben would design the model. Ben said, “I modified my *XP-3* design by adding twin rudders and movable control surfaces and renamed it *RC-1*. The cabin was changed slightly to allow for installation of the radio and huge battery pack required. Even with this additional baggage, the model still proved tail heavy due to the placement of the radio gear and heavy control linkage of that era.

“At the Nats I had to add three cans full of water within the fuselage nose as ballast to get the proper balance. It was heavy but flew quite well using the Forster .99 for power. We were allowed a 30-second engine run and as far as I can remember, I placed quite well in the event.

“A fellow named Cecil Winik, a famous cinematographer for Paramount Movie Studios, attended the 1940 Nats, and became fascinated with my unique Radio Control design. In 1941, Cecil manufactured the first Radio Control kit ever to hit the market – my *RC-1*.”

Cecil Winik's ad read as follows:

“Span 10 feet. Weight without radio controls six pounds. Will carry with ease five pounds of



radio equipment for three-way radio control, or can be equipped under one pound for rudder control only. Kit price \$15, less wheels and dope.”

### **Ben's Promotional Efforts**

Before World War II, Ben was teaching school, designing gas model airplanes, writing magazine articles, developing and manufacturing small class A engines, was a radio commentator on John Gambling's "Model Airplane Club of the Air" and actively promoting competition with gas models. He was also the president of the Kresge Department Store's Model Club of Newark, New Jersey and director of activities for over 2,500 club members flying their events at Hadley Field in New Jersey. Ben was also the contest director for many of the Eastern States Gas Model Meets co-sponsored by *Model Airplane News*.

Ben Shereshaw was truly dedicated to the model airplane movement.

### **The War Effort**

All model engine production ceased at the outbreak of World War II on December 7, 1941 and the model engine production quickly switched over to supply the war effort Ben designed and produced RF Coax connectors for military communications equipment. The Miniature Motors plant also produced gyro components and assembled the gyros for Sperry bombsights. The gyros were used to stabilize the bombsight and allow it to remain locked on target regardless of the pitching or tossing motion of the aircraft.

During those war years, Ben was especially proud of the young men working in the factory. Walt McBride, Charles Kenny, Frank Ehling, and John Romanowski, only to name a few, that later became famous on their own right. Ben stated with pride, "These kids had the natural inborn ability to produce these specialized parts. They had the mental discipline required for accurate machining and designing the components. They were naturals and I'm very proud of what they achieved."

Ben advised, "During World War II the Navy was flying reconnaissance and bombing runs from Midway Island and outlying aircraft carriers over the Sea of Japan. The early war efforts resulted in many flyers shot down over the Pacific praying for a rescue team to find them. The pilot's rescue equipment contained a small radio transmitter that would send out a S.O.S. signal to the mother ship or PBV flying boat's radiolocation beacon. Transmitting an adequate signal was difficult, as the fairly low powered transmitters required an antenna of substantial length to get the signal back to base. The first method used was carrying the antennas up on kites; however, this was not always successful due to wind conditions and weather problems. Next came a small balloon inflated by a CO<sub>2</sub> capsule; however, the balloon also suffered from the same wind and weather conditions.

Ben Shereshaw was then put under contract by the U. S. Navy Bureau of Special Devices to design a small twin cylinder engine to power a miniature, tethered coaxial helicopter, guided by a gyrostabilizer, to lift the rescue antennas to an adequate height in the most adverse weather conditions. The entire assembly would be contained in a small waterproof metal canister.

Ben developed a 3.25-cubic inch twin cylinder Bantam engine expressly for this purpose. This new engine weighed 3-1/2 pounds and developed 4.5 horsepower turning a 20/18 prop at 6,500 rpm.

Before the helicopter could be perfected, the war front improved, alleviating the need for the motorized rescue antennas. The project was terminated.

In the European front, General Patton was advised he would be the commander of the invasion forces when the time came. The general demanded that he have adequate fuel supplies for all the invasion vehicles as he had suffered from shortages all through the early war effort.

In preparation for the event, the Sparton Aircraft Company was developing a radical new invasion glider, the *XFG-1*. This was a radical swept wing design with rudder and no stabilizer (tailless) with a single cockpit for a pilot only. The entire fuselage was a fuel tank and the plan was to tow three or four of these gliders behind each *B-17* bomber in a convoy over the Atlantic.

Sparton Aircraft Company built the first prototype glider and found it to be dynamically unstable. The first prototype crashed killing the test pilot. A second prototype was being prepared for testing, using a large emergency parachute for recovery in case of further trouble. During this time, a 1/4-scale Radio Control model of the glider was ordered to be built for further flight-testing and extensive evaluation. To tow the test model Radio Control gliders, a 1/4-scale Radio Control *B-17* bomber was also under construction. The *B-17* was powered with four of Ben Shereshaw's 3.25 engines, which were previously developed for the Navy's rescue antenna helicopter.

The second full scale *XFG-1* test glider was launched from a blimp, only to result in an almost impossible effort to recover from a spin. The radical, tailless swept wing glider design was scratched from further consideration. The 1/4-scale Radio Control test models of the glider and *B-17* were never completed and the project was scrapped.

Consolidated *Vultee* built a prototype giant scale Radio Control model of the Convair *XP5Y-1* flying boat using four of the Bantam twin engines previously designed for rescue missions. The Navy was so impressed with the 12-foot wingspan miniature aircraft's test flight they awarded the contract for the Convair flying boat based on the model's performance alone. A full-scale prototype was never reviewed by the Department of the Navy and production started right from the approved model design to full-scale production.

In 1962, the Bantam 3.25 twin came into further use. Republic Aviation was put under contract by the Office of Naval Research to design a lightweight Radio Control reconnaissance (camera) drone, a bare essential design hence named the *Bikini*. Ben Shereshaw supplied the 3.25 twin engine as a power source. Republic's design and test model proved successful and several squadrons of *Bikini* drones were supplied to the U.S. Marine Corps. The *Bikini* became the forerunner of all reconnaissance drones. The Bantam twin 3.25 was only used in reconnaissance drones and never utilized in any of the all-familiar and expendable target drone models.

**Victory!**

After World War II the Bantam .19 production resumed using aluminum as the metal of choice for the die cast crankcase. Homecoming soldiers with a pocket full of mustering out pay created a tremendous demand for model engines and the Miniature Motors plant was once again humming at full capacity to supply the pent up demand.

### **The Glow Plug**

Shortly after the war, a person named Ed Chamberlin formulated and developed a potent new model engine fuel called Liquid Dynamite. The fuel testing was done using the Bantam .19 engine. During the test Ed and Ben shut the ignition off, and much to their amazement, the engine kept running. Quickly removing the spark plug, they realized that the ground electrode had broken off and the center electrode was glowing red-hot, which allowed the engine to continue running, using the hot new fuel.

Ben, ever the engineer, experimented and wound small nichrome wire elements to replace the center electrode therein making an early prototype glow plug; however, the nichrome material did not prove successful and burned out very quickly.

During this same time, Ray Arden was also experimenting with the same Liquid Dynamite fuel on his Arden 19. Ed Chamberlin excitedly advised Ray of his and Ben's discovery. Ray experimented further and discovered that an alloy of platinum and iridium wire provided a superior catalyst for methanol and the modern glow plug was officially born.

Ben Shereshaw made a manufacturing agreement with Ray Arden and Ben thereafter produced millions of glow plugs under the brand name of XL for the OK-Herkimer Company in his Miniature Motors factory.

### **The Bantam .60 Twin**

A Bantam .60 twin prototype was designed using a sand cast aluminum crankcase. The engine provided twin carburetors with dual rotary intake valves. The crankshaft used no gears and utilized four ball bearings with Teflon seals being used throughout the crankcase. This engine was only assembled in a limited number.

### **The Post-War Bantam .1 9/.25**

The later production Bantam .19 crankcases had an extra web along the bottom of the case. The web was for a proposed modification that would allow hollowing out the crankcase for clearance of a longer stroked crankshaft and offering a dramatic increase in power.

In 1946, using the webbed crankcase for a new prototype Bantam, Ben designed a new stroked crankshaft, used the same connecting rod and increased the bore size by .0015. The end result of this one and only prototype was an extremely powerful Bantam .25 engine, with the same weight and identical size/appearance of the Bantam .19.

The new one-off .25 prototype was loaned to Wait Schroeder for a test. The first flight offered rocket-like performance, as the model/engine screamed straight up, locked onto a thermal and

flew O.O.S. (out of sight) never to be seen again.

Shortly thereafter all existing Bantam .19 engines, parts, tooling and manufacturing rights were sold to OK-Herkimer. The new .25 was never placed into production. A Society of Antique Modelers (SAM) member or collector somewhere may now own a webbed Bantam.19 that runs like a scalded dog and unknowingly possesses the previously lost, one and only Bantam.25 prototype.

### **OK-Herkimer**

In 1947, the Bantam engine manufacturing rights and all existing inventories were sold to OK-Herkimer Company. The Miniature Motors plant continued on with full-time production of XL glow plugs.

OK-Herkimer continued assembly of Bantam .19 engines using up all existing inventory of previously manufactured components throughout 1948.

In 1948, the Ben Shereshaw-designed Bantam .19 became another final page in modeling history as OK-Herkimer ceased assembly and production of the Bantam .19.

### **The Bantam 2.6**

In 1993, at the Westchester Radio Aero Modelers Show, Ben Shereshaw showed up carrying his latest baby, an all-new 2.60-cubic inch power plant designed exclusively for use in ¼-scale model airplanes. It was lightweight and well balanced for low vibration. A solid state, battery ignition system offered easy starting at hand cranking speeds. It turned a 22 x 6 prop at 8,000 rpm with up to 30 pounds of static thrust.

Typical of Ben Shereshaw design are the smooth, beautiful lines displaying top quality and perfection in small details, which assures that only top grade materials, bearing selections and finish are also used within. Unfortunately, this engine never went into production and the prototype Bantam 2.6 now rests on display in Ben's home.

### **Conclusion**

Ben Shereshaw, best known as the designer of model airplanes and model engines, created a multitude of masterpieces during the Golden Age of model aviation. Yet Ben was ever vigilant in his desire to provide the young people a hope, a dream and a portal to their future. Ben's ever burning quest is to inspire the youth of any era to use model aircraft building and flying as a building board in order to achieve worthwhile skills for use in their own path to a successful career. This hope will follow him through eternity.

Ben Shereshaw was a creator and an inventor. One who followed his dream and succeeded in achieving his goals. Those that enjoy the sport of building and flying miniature aircraft can look back and remember Ben as a gentleman, a mentor of youth, and one of the grandfathers to the model aviation industry.





*1963: Norm Rosenstock (left) and Ben discussing the new twin cylinder engine Ben developed in his factory in New Jersey.*



*June 18, 2000: Ben with a 1938 Scientific Mercury that he designed. Ben was 87 at the time of this picture.*



*2003: (From left) Norm Rosenstock, Ben, and Ben's son, Jon, at the MECA Expo in Tulsa, Oklahoma.*

Bantam .16 Circa 1938/39

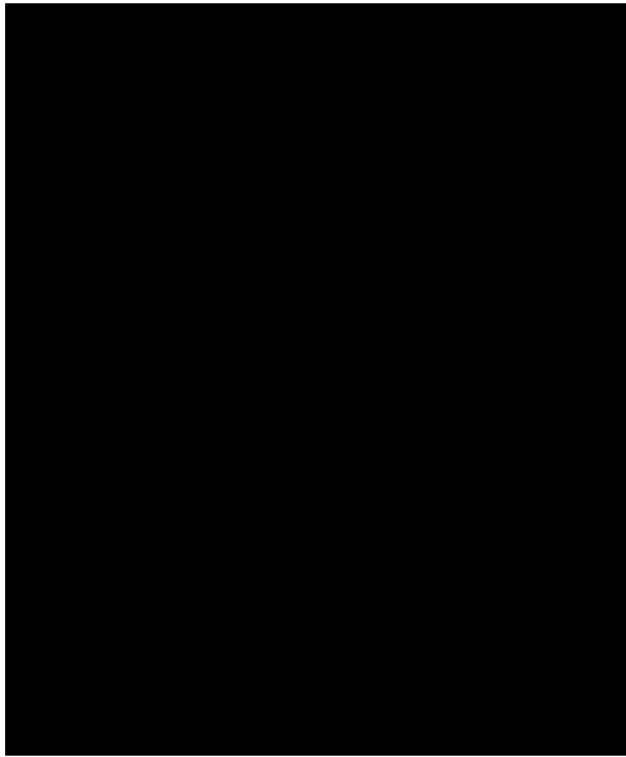
**BANTAM**

Introducing herewith an invitation to a new thrill in miniature engine performance. A truly miniature engine, both in weight and size, designed and engineered by Ben Shereshaw and associates. Ultimate consideration is being given towards the proper selection and heat treatment of alloys for all of the component parts. The weight of the engine as pictured will be 2 1/4 ounces. Bore, 19 32". Stroke, 19 32". Height overall, 3 1/4". Watch for further dates on delivery. Write for descriptive literature.

**MINIATURE MOTORS COMPANY**  
262 High Street      Nutley, New Jersey

Argyle    May-June 1938





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