



State of the Sport Free Flight Part 1

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The greatest day in Free Flight history took place on a golf course. It was August 6, 1939, and the location was the appropriately named Aviation Golf Course in Bendix, New Jersey. The event was the Wakefield International Cup contest: the world championship for FF model airplanes.

The US team included three champion modelers competing against 26 other of the world's best. The weather was sweltering hot but windless until approximately noon, with thermals aplenty—perfect weather for Free Flight.

In those days modelers were made to fly one at a time, and that morning Richard Korda of Cleveland, Ohio, drew the first position in Round One. He wound his large, red cabin monoplane tightly to 1,200 turns and then released it from the requisite rise-off-ground takeoff board. From that moment, Korda's place in modeling history—and the future of aeromodeling—would be changed forever.

Korda's epic flight could best be described as a dreamlike dance of a seemingly possessed model. It powered up perfectly to several hundred feet and began gliding gracefully, gently bouncing from one thermal to another.



Willard Smitz (Phoenix AZ) holds his 35-year-old Nordic A-2 Towline Glider. From before WW II to roughly the early 1970s, Towline Gliders were mostly balsa and tissue and were towed straight off the line into thermals picked from the ground. "Classic" Towline Gliders are still flown under NFFS special-event rules.



Dave Wineland with his Satellite 1000 at a Denver CO contest. It was designed in 1957 and remains one of the all-time classic FF designs. 1957 marked the beginning of the modern era of gas-powered FF, with rapidly improving engines, airfoils, and flight-trimming refinements.



The author, on the left, and Jerry Murphy hold versions of another mid-1950s Gas FF design: Toshi Matsuda's Zero.

The flight seemed routine up to that point. But as time ticked past, spectators, timers, and (especially) fellow competitors began watching in increasing amazement. FF models are usually carried far enough downwind to fly out of the timers' sight in a few minutes—roughly 10 at the most—in which case the timers' watches stop and the official portion of the flights will end.

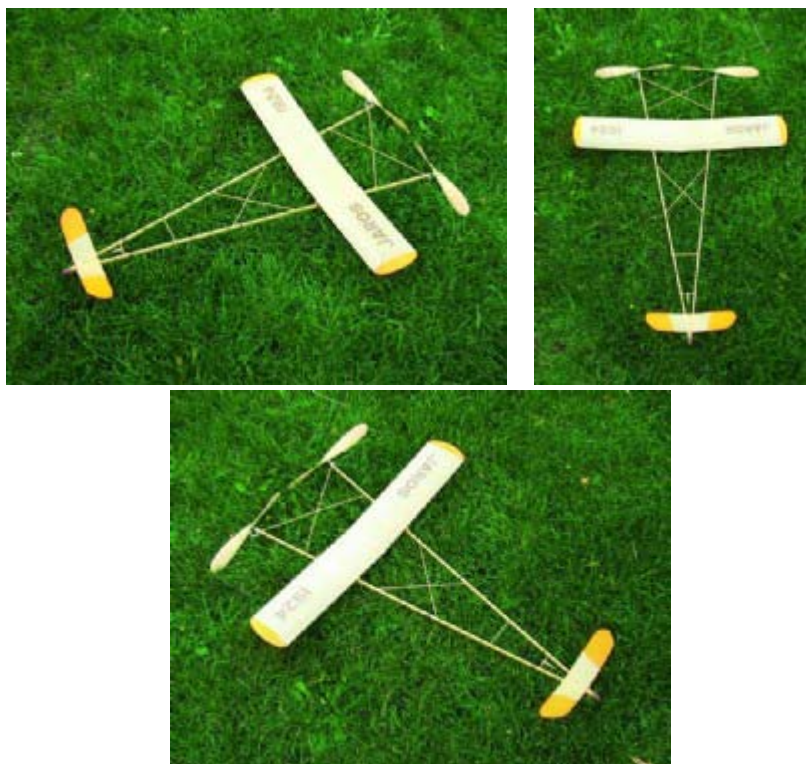
However, Korda's model stayed close, drifting from one end of the field to the other and back again, several times, in plain view of everyone present. By the time the model finally landed just a short walk from the launch point, most people knew the contest was really already over.

The time on the watch was a world-record-setting 43:29. Korda's other two flights that day were gravy. His three-flight average was high enough for him to win the Wakefield Cup by a threefold margin over his nearest competitor.

Aeromodeling has not been the same since that hot August day in 1939. Just as Charles Lindbergh's 1927 transatlantic flight transformed ours into a nation in love with flight, Korda's flight solidified model aviation as the most important hobby for America's youth.



Jackson Ivey holds a pristine classic 1950s FF engine: a Johnson .19. Such originals are still used in Nostalgia FF contests.



A typical A-frame twin pusher design from 1924. This was the most common planform for rubber-powered FF models until the late 1920s. Twin propellers contrarotated, thus canceling out torque.



Terry Ellington holds his great-flying Ramrod: a Gas FF design from the mid-1950s. Thousands of Ramrod kits and plans have been sold throughout the years, making it one of the most popular FF designs of all time.

As did Lindbergh, Korda instantly became a heroic figure. Magazines and newspapers told the story of his historic flight, ensuring his icon status—although Korda admitted humbly, “I got lucky.” Kit manufacturers scrambled to get the rights to his Wakefield design, and the Megow and Burd companies sold tens of thousands of Korda kits to eager youngsters.

Even though World War II put a damper on large-scale contest activity during the period from 1942 to 1945, kids still built models hand over fist, emulating the iconic Korda. In the meantime, the hero reigned as world champion for nine years. The Wakefield Cup was not contested again until 1948, when Korda would finish 16th.

In the years since Korda’s win, it is hard to find a modeler—and virtually impossible to find an FF modeler—who doesn’t emphatically answer “of course!” when asked if they’ve heard of Dick Korda. But in truth, FF modeling has a longer history before 1939 than since.

Penaud: Alphonse Penaud was an inquisitive young Frenchman who was only 21 when he designed, built, and publicly flew the first successful heavier-than-air flying machine. The historic flight took place August 18, 1871.

The rubber-powered model was the remarkably modern-looking pusher monoplane Penaud named the “Planophore.” Members of the French Academy of Sciences at the Tuileries Gardens in Paris were stunned when Penaud flew the model 131 feet in 11 seconds.



The Comet Clipper was one of the best-loved FF Gas designs of the late 1930s. Raising the wing onto a pylon was a major design refinement of the time, enabling much more consistent power patterns.



The evolution of the FF Gas model is seen in Bill Gieskieng's (L) 1950s Sandy Hogan and Ken Kullman's 1970s Lunar-Tic, which shows typical design refinements of a smaller stabilizer, higher wing aspect ratio, and longer tail moment.



The author's 2004 rendition of Dick Korda's famous winning 1939 Wakefield. It is perhaps the best-loved FF design of all time.

The Planophore was conventional in size and appearance (20 inches long and weighing approximately 15 grams). Its wingspan was roughly equal to its length, and it displayed remarkable flight stability—the result of Penaud’s methodical flight-testing. For the 11-second flight Penaud used only 240 turns on the rubber motor. In hindsight, surely many more turns thus a more impressive flight would have been possible.

Penaud also experimented successfully with small rubber-powered ornithopters and helicopters. He successfully marketed the latter to the general public as toys.

In 1874 a bishop from Dayton, Ohio, bought one of the Penaud flying toys and took it home to his 8- and 12-year-old sons for them to play with. The boys’ names were Wilbur and Orville Wright.

Birth of a Hobby: Thanks to the flying toys of Penaud and a few others, the world was in love with flight long before the Wright brothers’ aviation achievements at Kitty Hawk, North Carolina. The concept of FF model airplanes as an enjoyable pastime—not just scientific means to an end—was already well established before man-carrying aviation even existed.

Shortly after the Wrights’ success in 1903, model-aircraft books and magazines began to appear, capitalizing on the aviation fervor that was sweeping the world. Model clubs began springing up in the world’s largest cities, and before long contests were being held and records were being kept.

The models of the day were built mostly from hardwoods or bamboo, wire, and paper, and flights were measured in straight-line distance rather than duration. Despite these handicaps, by 1916 the world-record distance for a rubber-powered model had surpassed one mile.

Rapid Progress: The “A”-frame twin pusher dominated FF until roughly 1925. By the late 1920s tractor monoplanes became FF’s standard platform, and balsa had replaced all others as the primary construction material. By the 1930s towline gliders, hand-launched gliders, indoor microfilm models, and outdoor gas-engine-powered models came into being, further diversifying FF.

In roughly 1936 the first folding propeller for rubber-powered models was originated, and it was a revolution. Models could be made to power up to great altitudes and glide gracefully without the drag of those big blades. This development gave way to the need for another invention: the dethermalizer (DT).



Herb Kothe sends his 1930s-vintage Korda C Rubber model skyward. Notice the tall, oversized vertical fin, which was typical of Rubber designs of the era.



Bud Romak (L) holds his great-flying Gollywock; Herb Kothe holds his Korda C Stick. Both are Old-Timer Rubber designs from pre-WW II. The Gollywock has been kitted for more than 60 years and is one of the most popular FF designs of all time.



Art Hillis (Aurora CO) holds another classic Rubber design from the early 1940s: the Stickler by Dick Korda.

In the 1930s it was common for FF models to fly out of sight in thermals; it was rare for modelers to even give it a second thought. According to Model Aviation Hall of Famer Chet Lanzo, "We just became fast builders." Lanzo once wrote that a typical contest weekend meant arriving with twice as many models as he left with. Ouch!

The time for DTs had come. The first DTs were pop-out rudder tabs which spun models out of thermals. They sometimes worked too well, resulting in a crunched nose upon landing.

The pop-up stabilizer DT soon followed and has continued to be the most common DT arrangement to this day. The stabilizer is held down on the front and rear by rubber bands in tension. When a stubby fuse burns through the rear band, the stabilizer raises to a negative 40°-50° angle, putting the model in a deep stall and parachuting it out of the thermal.

The Max: Dick Korda's 43:29 world-record Wakefield flight soon prompted major rules changes for how flights were scored in competitions. Instead of hoping for one lucky flight and an eagle-eyed timer, FFers would shoot for a target maximum time on each flight—similar to a par in golf.

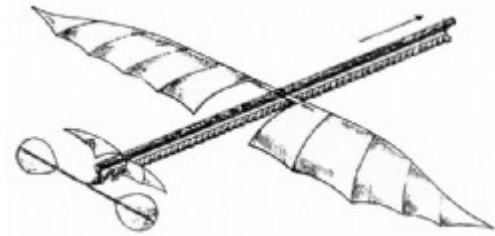
The “max,” as it became known, along with the widespread use of the DT, changed FF drastically for the better at roughly the end of World War II. Then the best modelers were the ones who could consistently put their models in lift, score the max, DT the models, and return to the line for the next flight.

With that, models were no longer disposable. Because of that, flight testing and design refinements rapidly improved the airplanes' performance level.

The Peak of Popularity: In the 1940s model aviation's popularity was nearing its zenith. Model engines were being perfected and advancements were taking place every month.

Giant contests were held in city parks across America. These meets had huge exposure through newspaper coverage and corporate sponsors such as Plymouth automobiles. My father recalls one meet he entered in San Antonio, Texas, in approximately 1949, when he was 11 years old.

“There were probably a hundred kids entered,” he said. “You had to stand in line to wait your turn to fly.”



The rubber-powered Planophore was the first successful heavier-than-air flying machine. Stunned spectators watched designer Alphonse Penaud fly the model for 11 seconds in 1871.



Sarah Campbell holds FF Hall-of-Famer Bill Gieskieng's Sandy Hogan: a classic 1950s FF Gas design. Tens of thousands of Gas FF kits were sold in the 1950s. They are still common, thanks to the Nostalgia Gas rules sponsored by the NFFS.



FF legends Sal Taibi (L) and Bud Romak. Sal designed such classics as the Brooklyn Dodger and Starduster. Bud—the 1976 Indoor World Champ—holds a 1955 Nostalgia Wakefield Rubber design. The Wakefield rules changed drastically in the 1950s, first eliminating the fuselage cross-section rule, then limiting rubber weight, then eliminating the ROG requirement in 1959. Today Wakefields are javelin-launched and can clock up to six minutes in neutral air on a scant 30 grams of rubber.

By the 1950s, many FF modelers saw CL as an improvement over their interest and moved to that discipline. RC was also starting to develop as yet another alternative to FF.

But FF still ruled in the meantime. The contest scene across the country was still at least 50% FF. Even CL and RC modelers built and flew FF in those days because it was the cheapest and easiest way to start. (Actually, it still is.) Everyone built his or her own models back then, which is a huge departure from today.

The 1960s: By this time FF was still quite popular, but RC had taken the modeling world by storm. With the advent of proportional radios and better battery and engine technology, RC was just too evolved for most modelers to resist. Yet FF continued to thrive behind the scenes on a lesser scale.

In an age when the three modeling disciplines were fiercely proud and independent, the time was right for FF modelers to band together. Therefore, in 1967 the National Free Flight Society (NFFS) was born.

The NFFS exists to this day as an organization that is dedicated to “preserving, promoting, and enhancing the art, sport, and science of Free Flight Model Aviation in all its forms.” Starting with three founding members, the NFFS has grown to more than 1,600 members in every US state and several dozen foreign countries.

The organization's award-winning Free Flight magazine is lovingly published 10 times a year—as it has been since 1967—by FF volunteer writers and editors, and it contains 100% FF content. NFFS volunteers have also produced and published a Symposium book every year since 1968. It

features the latest in FF technology and theory and includes an honors list of the best FF model designs.

A Modeling Rebirth: The mid-1960s saw the emergence of two other important national FF movements: the Flying Aces Club (FAC) and the Society of Antique Modelers (SAM). SAM was founded by old-time modelers who were interested in nonscale designs and engines of the 1930s and 1940s. They resurrected classic designs such as Kordas, Gollywocks, Comet Sailplanes, and Playboys.

The SAM movement started in Denver, Colorado, in the early 1960s. John Pond simultaneously spurred the movement along further west in California, and it struck a chord. Denver's Model Museum Flying Club eventually became SAM Chapter 1: the first of hundreds of chapters that have sprung up since.

As does the FAC, SAM holds a national-championship meet every year, and it is hugely popular. SAM Speaks is one of the best newsletters in the FF world, and it is published six times per year.

The Flying Aces Club (FAC) was founded by Dave Stott and Bob Thompson—two modeling friends from Connecticut who viewed the modeling world as generally too serious. They opined that it had evolved past the grade-school innocence of the 1930s and 1940s, as illustrated in the pages of the whimsical Flying Aces magazine of that era.

The FAC picked up where the magazine left off, resurrecting an off-the-cuff, childlike aura. Bob Thompson occasionally donned a leather flying helmet, silk scarf, and goggles on contest days, calling himself “Captain Downthrust.”

The FAC steadily gained strength through the years to the point where a national contest was established and approximately 60 FAC Squadrons rose up in major cities across the country and even overseas.

The FAC is showing no signs of slowing down. Most of its events are for rubber-powered flying scale models, and FAC participants are undoubtedly the world's best at FF Scale.

Hundreds of FAC-only meets are held throughout the year from coast to coast, including a major meet at the AMA field in Muncie, Indiana, and the annual FAC Nats (which takes place in even-numbered years) and “Non-Nats” (which takes place in odd-numbered years) at the Geneseo airport in western New York.

The FAC has an official rule book but no elected leaders—an anachronism, one would think. Yet this organization is a truly great success story. It has a younger membership base than most FF groups, and its popularity continues to grow steadily. All AMA clubs could benefit from studying the FAC's success. MA

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