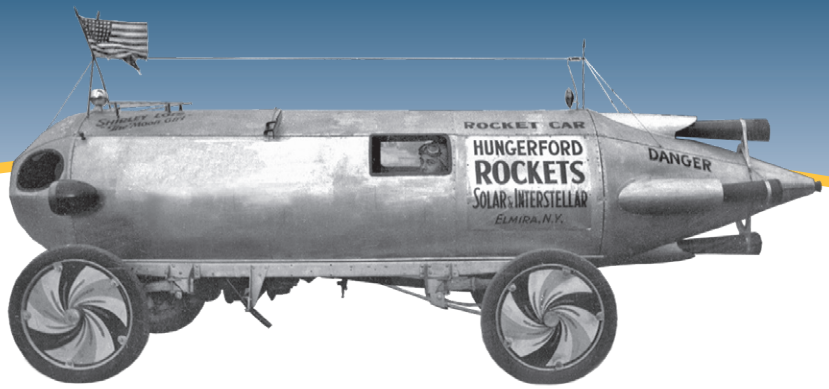


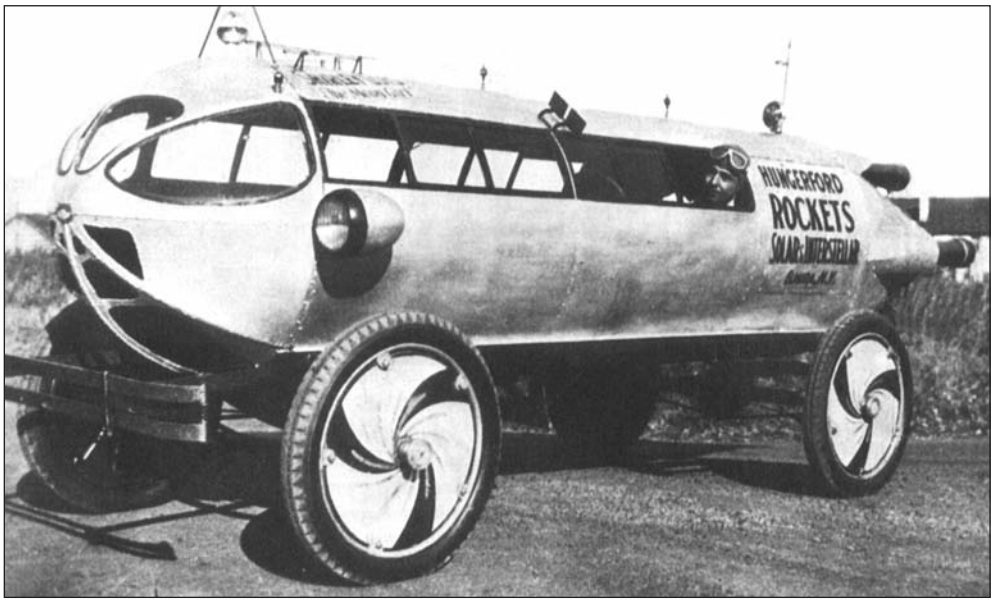
DANIEL AND FLOYD HUNGERFORD:

ROCKET POWER, INTERSTELLAR TRAVEL AND ETERNAL LIFE

BY
GEOFFREY N. STEIN

NEW YORK State Museum
Record 4

Daniel and Floyd Hungerford:
Rocket Power, Interstellar Travel and Eternal Life



Daniel Hungerford in the Rocket car circa 1933.

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Daniel and Floyd Hungerford:
Rocket Power, Interstellar Travel and Eternal Life

By
Geoffrey N. Stein

New York State Museum
Albany, New York

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FORWARD

At the New York State Museum in early 1979, I encountered Schuyler Lathers, who, as I, had lived in Elmira. Our conversation turned to inventors and mechanics in Elmira's past, especially to Daniel Hungerford.

Recalling in the 1950s I had seen the rocket car built by Daniel and his brother Floyd Hungerford, I contacted the Chemung County Historian, Thomas Byrne. I wrote, "Hungerford is dead, and, I think, his house is gone. But I wonder if any of his engines or airplanes or automobiles or manuscript material have [sic] survived."

As both historian and newspaper writer in Elmira for many years, Byrne responded, "He [Daniel] was so destitute in the terminal years. Possibly the Curtiss Museum at Hammondsport might have an item or two." Byrne sent me clips from the Chemung County Historical Society archives about the Hungerfords. And he suggested, "Look this material over and keep in touch, will you?"

I replied with thanks to Byrne, hopeful I would learn about relics at the Curtiss Museum. I added, "I was interested to note that the rocket car was being rebuilt near Albany in the 1960's. Perhaps I'll find someone who remembers it here."

Then, in a short time, I found the rocket car. And now, many years later, I've written about Shirley Lois "The Moon Car" and the Hungerford brothers.

ACKNOWLEDGEMENTS

The story of Daniel D. and Floyd S. Hungerford has fascinated observers and writers at least since the 1930s, when the Elmira newspapers reported inventive exploits, principally of the older brother, Daniel. In the mid-1960s, Keith Marvin's "The Wizards of West Second Street", a biographical essay published by *Automobile Quarterly*, brought the brothers' exploits to a much wider audience. That piece prepared the way for additional Marvin articles which inspired local Elmira writers as well as authors as far away as Sidney, Australia (Igor Spajic in *Restored Autos*). To the late Keith Marvin, in particular, I am indebted, not just for his several Hungerford stories, but also for the donation of his Hungerford files to the New York State Museum. Among the items received by the Museum (where I served as a curator for over 40 years) are informative and invaluable letters from Daniel Hungerford to Marvin as well as photos and other documentary materials.

Over several decades members of the Hungerford family have written to me with their observations and thoughts about the Hungerford brothers. Notable are Daniel Hungerford's daughter, the late Shirley Lois Hungerford Hyde, and the grandchildren of the inventors' other brother, William J. Hungerford. These grandchildren were Joan Hungerford Schatz, Linda Hungerford Lathrop and Jon Elan Steen.

Men associated with Daniel and Floyd Hungerford during their working lives have shared fascinating stories. These men have included George Mapes, Robert Boyles, Cliff R. Towner, Schuyler Lathers and H. Steven Sekella. The family members of other Hungerford collaborators also have provided insight, notably Joseph E. Kosmicki, whose grandfather Stanley Kosmicki piloted the Hungerfords' Bleriot airplane in the 1910s, and J. Royce Hunt, whose grandfather J. Emory Botsford helped construct the Hungerford rocket car and was a life-long friend. T. J. (Thomas Jack) Carpenter met Daniel Hungerford late in the latter's life and has mailed me his observations and conclusions.

David Smith, a Cincinnati-based television cameraman in the early 2000s, planned a documentary film or video of the Hungerfords' exploits. To that end while traveling the country to investigate potential sources, he performed prodigious and comprehensive research. While his production seems not to have been completed, he shared his findings in the forms of a large number of photocopies, as well as photographs as electronic images in disk form, deposited at the Glenn H. Curtiss Museum in Hammondsport, New York and the Chemung Valley History Museum in Elmira. Staff members at both institutions have been generous in making that material available to me. Former and present curators at the Curtiss Museum also have shared information about the Hungerford material in the collections there.

After the deaths of the Hungerford brothers and of Ralph L. Hodge, who had acquired the Shirley Lois "The Moon Girl" rocket car, the vehicle became the property of Daniel S. Dwyer. Shortly before his death, he presented the car to the New York State Museum, where thanks to his generosity the vehicle has been displayed in Albany as well as elsewhere in other museums for the enlightenment and entertainment of visitors.

Helpful and careful readers of the manuscript of this book have included Joan Hungerford Schatz, the Hungerfords' grand-niece; George Mapes, who added corrections as well as expanded data; Jennifer Lemak, my colleague historian at the State Museum; Myra Rynderman, a helpful volunteer in the history collection at the State Museum; Thaddeus Beblowski who processed photo images; Carol Cooper who designed the manuscript and Leigh Ann Smith who was the cover artist. At the State Museum patient managers included Robert Weible and John Hart. Additional credits for contributions to this work are to be found as endnotes and in a short bibliography. The author apologizes for possible oversights in naming all those who have added to the Hungerford story.

Geoffrey N. Stein
New York State Museum
March 2013

Chapter One

EARLY YEARS

In the late nineteenth century William Martin Hungerford (1849-1903), a sometime Elmira silversmith, tried farming in Pennsylvania to "improve his luck".[1] So his younger sons, Daniel D. Hungerford (1886–1967) and Floyd S. Hungerford (1888–1963), spent their early years in the rural area south of Elmira, apparently Jackson Township in Tioga County and Wells Township in Bradford County, both in Pennsylvania, as well as in the Town of Southport in Chemung County, New York. In addition to William, the family included his wife, Mary (Ward) Hungerford (1856–1944); an older son, William J. Hungerford (1883–1955); and a daughter, Jennie May Hungerford (1892–1964), later Mrs. Fred H. Badger. Census records document a peripatetic existence for the family with father William having been born in New York, Mary in Pennsylvania, son William in New York, Daniel in Pennsylvania, and both Floyd and Jennie in New York.[2]

Growing up in a rural, and claims Australian automobile historian Igor Spajic, impoverished environment, the Hungerfords had only a public school education. But, Spajic continued, the brothers had the motivation to leap ahead into unexplored realms of science and technology.[3] Daniel David Hungerford himself after noting his birthplace in Wells, Bradford County, Pennsylvania on August 14, 1886, wrote that his education was "graded schools" and his early work as "Farmer to 1905; box factory and school to 1906."[4] Late writing of his life and that of his brother Floyd, he noted that "as boys we had no bicycle so built one—c. Changed a clock works into a self-propelled vehicle—dad was quite surprised. built a threshing machine & built a hand sled. Flood took our thresher. Boys stole [?] our sled. [B]uilt steam engine—have that. P.S. will send a list of our exploits down to the sled moving wheels & etc. D.D & F.S. Hungerford by D.D.H."[5]

In 1967, an unidentified appreciation of Daniel Hungerford's life noted that

> His flair for mechanics showed up at an early age. He wondered why a traction engine had a governor. So, when no one was looking, he unhooked it, eased back the throttle and discovered the governor's purpose. It wasn't long before he was taking things apart and studying them. The engine always ran better when he got through.[6]

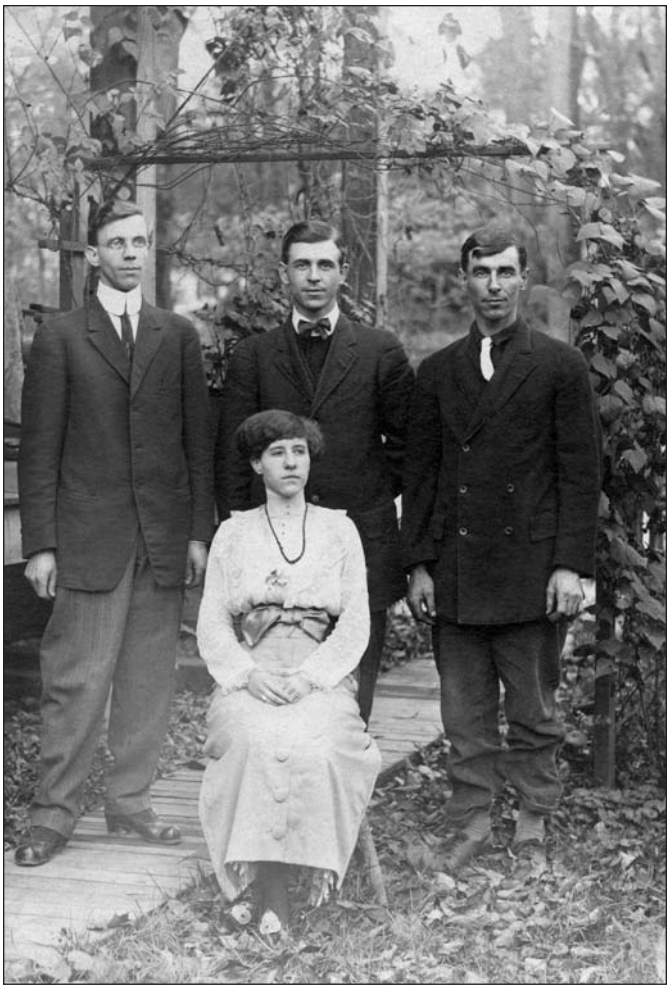

Figure 1. The Hungerford siblings posed in the 1910s: Jennie and, from left to right, Floyd, Daniel and William. The photo probably was taken in Elmira, New York.

Keith Marvin in the 1960s wrote that because of Daniel and Floyd's limited formal schooling, the two as adults exploring rocket power had "taught themselves

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advanced algebra, plane and solid geometry, trigonometry, logarithms and calculus." After discovering imprecision in a slide rule, "they perfected a higher form of mathematics which they found to be foolproof and which they used in all subsequent engineering design and building."[7] Marvin also noted, "This form of mathematics has no known name, but all future work carrying the Hungerford name was based on it."[8] Daniel Hungerford in a handbill promoting his election to the state assembly in 1948 said he had "studied mechanical engineering, electricity, and social science by correspondence."[9]

In January 1903, William M. Hungerford was "killed instantly by falling lean [-] to roof—load of snow"[10] leading to the eventual Hungerford family's move back to Elmira. Years later Daniel Hungerford after learning of a roof collapse on a shelter in a city park wrote to a newspaper editor, probably of the Elmira *Star-Gazette*,

> Perhaps the writer is over-sensitive to this sort of thing. In the winter of 1903 he and four others were called to look at a lean-to cowshed roof that had split one of its supporting posts under a moderate load of snow. The group walked under the roof to get a view of the split post. Father, a brother and cousin were under the roof when the farmer shouted a warning. The roof fell and father was killed outright and brothers [sic] and cousin seriously injured.[11]

Brothers Daniel and Floyd first appear in the Elmira city directories in 1907 residing with their widowed mother Mary and their sister.[12] Daniel's profession was listed as machinist and Floyd as a "shoe operator"; by 1909 both Hungerfords were listed as machinists with Daniel employed by John T. Young on Railroad Avenue in Elmira. Although the 1910 federal census identified Floyd as a laborer in the masonry trade, the directory again listed both brothers as machinists. A surviving photograph shows the two in working clothes, posing with two other men, one likely John Young himself, in front of the Young machine shop. Daniel Hungerford in the *Who's Who in American Aeronautics* reported, in the mid-1920s, that he had worked in the "General Machine Repair Shop of John T. Young" until 1911 when he became "inventor, designer and foreman, American Thermostat Co., Newark, N.J., to 1914".[13]

The American Thermostat Company with directory listings from 1909 through 1914 actually was located in Elmira. In the years Hungerford was employed by American Thermostat, the offices were first on East Water Street, then on East Church Street, and finally in the Robinson Building, a multi-story structure largely housing lawyers, insurance agents, and similar offices.

In 1909, Burchard Johnson, previously associated with the Queen City Electric Company, was American Thermostat president and proprietor. For the 1910 and 1911 directory years, Harry M. Swartz, previously

Figure 2. Posing in front of Young's Machine Shop located on Railroad Avenue in Elmira ca. 1910. Left to right, are likely, J. Philip Young, (John Young's son), Floyd Hungerford, John Young (proprietor), and Daniel Hungerford.

secretary-treasurer, was president. From 1912 through 1914, a completely different group was in charge with Albert S. Bevans serving as president. The turnovers in management and addresses suggest an unsettled state for the business. One might conclude the company was created, unsuccessfully it appears, to exploit a Hungerford invention.

An American Thermostat patent application was filed on July 22, 1909 and the patent granted March 22, 1910 to Daniel Hungerford with assignment to American Thermostat. For an "automatic stop and reverse mechanism" suitable, according to the patent, were a "thermostatic damper regulating apparatus, automatic clock winders, and the like." The sophisticated and complicated device suggests the depth of Hungerford's mechanical insights. The description of Hungerford's patent (#952,991) notes

> The object of my invention is to provide a means whereby the reverse motion will be accomplished without reversing the motor, in combination with an automatic stop and reverse switch, whereby the connections leading to the circuit closing device will be short circuited immediately upon the closing of the motor circuit; thereby eliminating the effect of any fluctuation in the circuit closer, and insuring the continuous operation of the mechanism for the prescribed period, or number of revolutions.

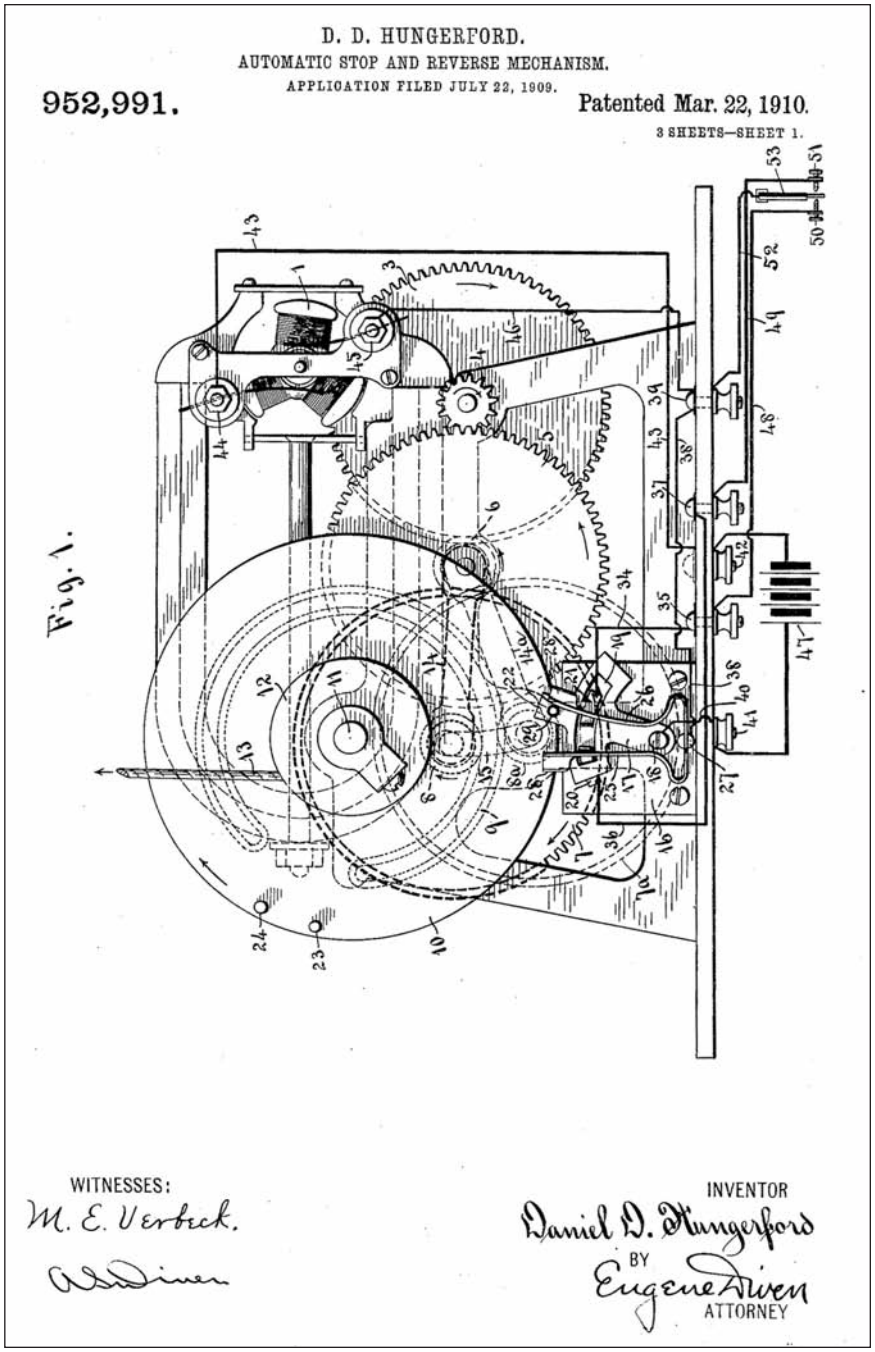

Figure 3. Daniel D. Hungerford's patented invention in 1910 for an "automatic stop and reverse mechanism" was assigned to the American Thermostat Company in Elmira.

Daniel, Floyd, their sister Jennie, and their mother Mary moved from the east side in Elmira, probably in the summer of 1911, to far West Second Street, a generally undeveloped area near the city line.[14] Daniel Hungerford wrote later that his house and the neighboring structure to the west were built for Peerless officials of a dye factory located in the 700 block of Second Street. The two houses probably were erected in the mid-1890s, possibly 1896.[15]

Beyond the city's water and sewer system, the Hungerfords shared a shallow well with the residents in the similar house to the west. Hungerford later recalled the cost of his property was $1,100 in a "land contract from a Mr. John Holleran [sic] who took the contract from Arnot Realty Co. E. J. Dunn was the co. agent."[16] Over the years, the house was piped for water and wired for electricity by the Hungerfords. A "pipe-

Figure 4. This photograph of the house at 823 West Second Street Elmira probably dates from the 1960s. Hungerford family members lived in this house from 1911 to 1966.

less" furnace was replaced by a "piped job". Floyd Hungerford undertook major exterior repairs in 1961. A new water heater was installed in 1965.[17] This work is mentioned here because of the confiscation and demolition of the house by the city described later in this book.

From 1915 Daniel Hungerford was listed in the directory as "garage owner", and by 1916 Daniel and Floyd were listed together as Hungerford Brothers with a machine shop at 825 (usually 823) West Second Street.[18] The operation was in an outbuilding behind the house.[19] Hungerford wrote that "We built our Shop—1914–15 and added north addition 1917" as Charley Hungerford helped in the initial construction with Charley Osman [?] the addition.[20]

Success in the garage, at least in one point, included as many as twelve employees.[21] For decades to follow, from the 1910s to the 1950s, the Hungerford Brothers garage was the staple business in Elmira for repairing automobiles and aircraft.

ENDNOTES

1 Notes made June 22, 1992, by the author after listening to a tape recording made in 1974 of Keith Marvin reading a lengthier, unpublished version of his "The Wizards of West Second Street". One assumes that the data came from Marvin's interviews with Daniel Hungerford in 1964.

2 Daniel Hungerford to "Ed & Helen", August 26, 1966, wrote that his brother William was born in Southport (New York) on the Kile [?] Kinsman's farm; Daniel at the "head of Bird Creek in Wells Township, Bradford County, Pennsylvania; Floyd on Jay Street in Elmira; Jennie on Miller's Farm at Pine City, New York; father William at Latta Brook; and mother Mary Ward at Troy, Bradford County, Pennsylvania. He also noted that his father died at the Lyman Brescre [?] farm in Mosherville, Pennsylvania; his mother and brother Floyd at 823 W. Second Street; his brother William at the home of his daughter Vivian Wells at Daggett, Pennsylvania; and his sister of Gang Mills, New York, in the Corning hospital. The 1930 federal census indicates that farmer Fred Badger was twelve or thirteen years older than his wife. They married about 1920. According to city directories in the 1910s, Jennie Hungerford was employed by an Elmira "manufacturing confectioner".

3 Spajic, Igor, *Restored Cars* , Numbers 139 and 140, March-April and May–June 2000,

4 *Who's Who in American Aeronautics* (1925). Apparently Daniel Hungerford himself provided the biographical data for this publication.

5 Daniel Hungerford to Keith Marvin, June 11, 1964. Several of these inventions are mentioned again later in this work. The signature is typical of that used by Daniel Hungerford after the death of his brother Floyd.

6 Unidentified newspaper clip marked by hand " . . .67".

[7] Keith Marvin, "The Wizards of West Second Street" manuscript version, pp.10–11. Unfortunately, there is no explanation of the new mathematics.

[8] Marvin, "The Wizards of West Second Street."

[9] See Chapter 5, "Politics."

[10] Daniel D. Hungerford to "Ed and Helen", August 26, 1966.

[11] Undated, unidentified newspaper clip.

[12] Keith Marvin in the manuscript version of his "The Wizards of West Second Street", p. 8, says the Hungerfords returned to Elmira in 1905.

[13] Newark, New Jersey city directories from 1911 through 1914 have no listings for an American Thermostat Company or for Daniel Hungerford. There is an American Transformer Company, a manufacturer of electrical apparatus.

[14] Daniel Hungerford in 1966 wrote that Mary Hungerford and all four of her children purchased the house for $1,100. He added that the "sister house" to the west was purchased by the "Harders from Adison [sic], N.Y. a year or 2 later." A third house, at number 829, was built later. His brother William moved a house from Guinnip Avenue to the rear of the lot at 819 West Second Street. He lived there for "several years. Some of his children were born there. W.J.H. later turned the [sic] (819) in as first payment on a farm at Caton, N.Y." Daniel D. Hungerford to "Ed & Helen", August 26, 1966. Directory listings confirm William's residence at 819 West Second Street in 1914 through 1917, when he was employed at the Hotel Rathbun.

[15] City directory listings for 1897 show William S. Love, a solicitor for the New York and Pennsylvania Telephone and Telegraph Company, residing at 823 West Second Street and Henry Pelham, a carpenter, at 827 West Second. The 1896 directory shows Pelham living at 816 W. Gray Street and no Love listing.

[16] The agent likely is Edward J. Dunn (1866-1927). The *Elmira Advertiser*, October 24, 1927, notes Dunn worked at the Arnot Real Estate office in the 1880s. Later Dunn was an executor of the Mathias H. Arnot Estate, See below for a story of the Dunn funeral.

[17] Daniel D. Hungerford to "Ed & Helen", August 26, 1966.

[18] Daniel Hungerford in a letter to "Ed & Helen", August 26, 1966, noted that when his family moved to the Second Street house, "it was [numbered] 825 - at the time and changed to 823 – later".

[19] Daniel Hungerford in a letter to Keith Marvin, July 15, 1964, described the construction of the garage around 1917.

[20] Daniel Hungerford, August 26, 1966. Charles A. Osman, a carpenter, rode in the Hungerford rocket car in 1934. See below.

[21] Erwin D. French to Paul Edward Garber, December 30, 1967.

Chapter Two

THE AVIATION BUSINESS

"Dan Hungerford built his own small plane which he flew from various places in Chemung County. His favorite place was a piece of land that is now included in the Chemung County airport. He said it was the best place in the county from which to fly."[22]

Keith Marvin, who wrote extensively about the Hungerford brothers, noted that Daniel Hungerford was interested in aviation as early as 1901. A newspaper clip from 1965 suggests Hungerford's interest was piqued by a "borrowed book, entitled *The Boy's Book of Inventions* printed in London."[23] Hungerford himself wrote in 1964 that he "began studying" aviation in 1901. He said the inspirational book belonged to "a neighbor boy - a Christmas present to him by an aunt, the book is lost and I haven't been able to find a copy since. I did find -1/2 of a copy projecting from a bale of paper and books on a truck . . "[24]

By 1910 Daniel and Floyd had built a two-cylinder, opposed aircraft engine. The *Sunday Telegram* for September 11, 1927, noted that in 1909 the Hungerfords built the first airplane engine in Elmira. "It is a 30 H.P. engine that actually flew an airplane. It loks [sic] as much like a modern airplane engine as a sewing machine would. But it flew!" An undated newspaper clip, probably from 1913, describes the engine, "entirely of his [Daniel Hungerford's] manufacture and is considered much superior to some of the large ones. It is small and has more power."

Cliff R. Towner, who knew Dan Hungerford in early 1940s, recalled "seeing pictures of Dan and Glenn Curtis [sic] at Hammondsport when Dan was Glenn's Chief Mechanic on his first 'Flying Boat.'[25] Jon Elan Steen, Hungerford's great-nephew, said William Hungerford told Elan Steen that "Dan worked for Curtiss Smith [sic] Aircraft in his early years and that was how he first became interested in flying."[26]

Glenn H. Curtiss by 1909 had become well known as an aviator as well as an inventive manufacturer of

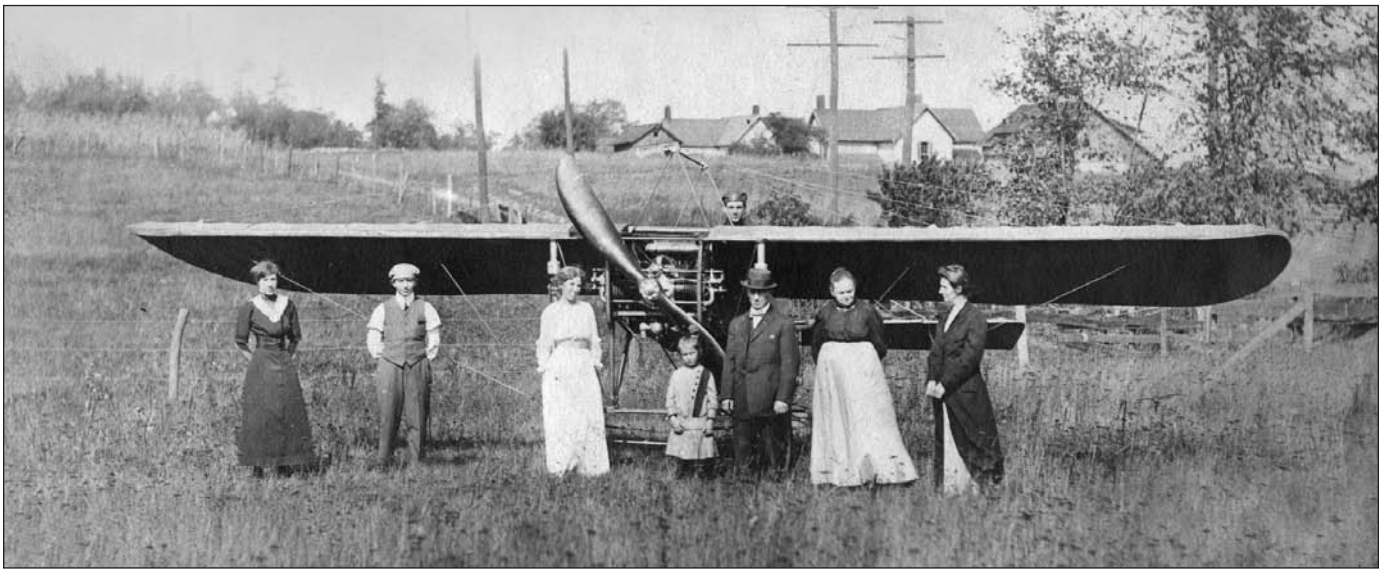

Figure 5. The Bleriot Type XI airplane, with Daniel Hungerford as pilot, located near West Second Street in Elmira with the Hungerford house behind at center. Left to right are Jennie Hungerford Badger, Stanley Kosmicki, Nellie Ahern, Vivian Hungerford (later Wells), Robert Pease, "Mrs. Esther War of Mud Creek near Troy [Pennsylvania]", and Mary Ward Hungerford. A similar but not identical image was printed in August 7, 1955, *Sunday Telegram.*

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engines and airplanes. Among Curtiss airplane types, the "first successful flying boat" arrived in 1912. Author Louis S. Casey's *Curtiss [,] The Hammondsport Era 1907–1915* documented the history of Curtiss airplane construction. While Hungerford who lived in Elmira only a few miles from Hammondsport, Casey's did not mention him among several Curtiss employees and colleagues.[27]

The August 7, 1955 edition of the *Elmira Sunday Telegram* reported that on August 13, 1913 Daniel and Floyd had acquired a Bleriot Type XI monoplane built by August Rauschenbusch of Greenville, Pennsylvania. Such an airplane in 1909, piloted by Louis Bleriot, had become the first to fly across the English Channel. Bleriot himself built and sold Type XI monoplanes while other manufacturers, such as Rauschenbusch, built copies.

The *Telegram* in 1955 continued, "The motor in the plane was broken when acquired by the Hungerford brothers. They made patterns and had the necessary castings made at the Weller Foundry in Horseheads and the Sayre Stamping Works. These were welded into place by William T. Shoemaker . . . The Hungerfords and Frank Edic . . . also converted the craft into a biplane. They later sold it to a Capt. Walters of Lumberton, N.C."

A clip from an Elmira newspaper in 1913 or 1914[28] reportedly shows a photo of Daniel Hungerford taxiing the Bleriot "in a field in the western part of the city." While Hungerford was using a Detroit Aeroplane Company engine in the airplane at that time, he had plans to install his own power plant. Hungerford expected to make "many flights in the city during the summer and promises royal entertainment in this line. He believes his motor will prove superior to others on the market. He is working very quietly but he expects in a month to be able to make a flight."

A newspaper clip dated May 13, 1958 with the same image purportedly shows a photo of Leon (Windy) Smith

> just becoming familiar with the controls of an airplane. It was then that he "hopped" this 1909 [sic] Bleriot monoplane from 823 W. Second St. to the corner of Hoffman and Second Sts. The plane, believed to be the first in Chemung County, was owned by Daniel D. Hungerford, who took this picture, and his brother, Floyd F. [sic] Hungerford.

In a 1961 letter Daniel Hungerford wrote that the Detroit engine with a 5.5" bore and 5" stroke developed thirty horsepowers. A rod had "broken and took a piece of the cylinder and crankcase with it. We made patterns of the missing parts and had castings made and molded them up but she was underpowered—just as well or I might not be writing this."[29]

While one might wonder if the similar Hungerford airplane engine is actually the rebuilt Detroit, a comparison of the two engines shows that the component parts differ. Perhaps the Hungerfords had been inspired by photographs and descriptions of the Detroit engine produced as early as 1909. Daniel Hungerford wrote that he and Floyd built their engine "back in 1909–1910."[30]

J. Philip Young in a 1975 letter to the Glenn H. Curtiss Museum wrote:

> Dan and his brother Floyd worked as machinists in my father's machine shop known then as The Glass Cutters Supply Co., later the Young Machine Corp., on Railroad Ave., in Elmira…
>
> While working in Dad's shop they were bitten by the "aeroplane bug" and talked Dad into letting them build an aeroplane Vertically [sic] in an open area in the shop. It was necessary for them to get permission to remove the flooring and joist, from a space, from the floor above.
>
> The plane was successful for they flew it in Schornsteiners [sic] cow pasture, near their home.[31]

A photo dated 1912 [sic] shows Daniel Hungerford and a friend, Stanley Kosmicki, with the same airplane. Marvin said the Hungerfords participated in "airplane meets and barnstorming events with their Bleriot monoplane."[32] But Kosmicki wrecked the Bleriot monoplane; a photograph documents the damage. A non-attributed typescript at the Glenn H. Curtiss Museum says the nineteen-year old pilot "got too close to the ground, hit a knoll, and destroyed the airplane, fortunately doing no damage to himself." Kosmicki's grandson Joseph E. said in 1994 that the Hungerford-Stanley Kosmicki "relationship nearly ended (along with the future of the Kosmicki family) when my grandfather crashed the plane into a grove of trees, in what is believed to be the first air crash in New York State. We do have pre-crash photos of the plane."[33]

Daniel and Floyd Hungerford along with Frank N. Edic rebuilt the craft as a biplane. City directories for 1921 and 1922 include a photo of the modified Bleriot airplane in advertisements for Hungerford "Automobile Repairing and Airplane Builders & Repairers" at 823 W. Second Street.

Other photographs labeled by Hungerford show first the redesigned frame and later the refinished airplane.

> ELMIRA, N.Y. Oct. 1922
> Small biplane—built from our old Bleriot monoplane cross channel type -1909—model. (dam fools we were) and sold it to J. E. Walter, mgr. "Carolina

Figure 6. Rebuilt as a biplane, this is the Bleriot frame before it was covered. The photograph was taken behind the Hungerford house at right.

> Fliers" Lumberton, North Carolina and finally acquired by Clarence Chamberlain, Teeterborough, N.J. but never received. Seems he got in a scrap with Chamberlain?
>
> The motor was a Detroit aeroplane 5 ½" Bore – 5" Stroke -2 –Cyld opposed 35 to 40 H.P. aircooled—prop was a Paragon 5' - - Pitch x 5' – 6" diam. We built the prop [?] on the little biplane –
>
> This is a picture of Hungerford Brothers Shop and Residence at 823 W. Second St Elmira, NY and the little biplane built from our old Bleriot Biplane 1909 model. Our "Bleriot"—was built by August Rauschenbusch—Greenville, Pa, near Meadville, Pa.[34]

Marvin reported that the Hungerford's rebuilt Bleriot was replaced by a Curtiss "and two or three Wacos." Of his aviation accomplishments, Daniel Hungerford wrote in *Who's Who in American Aeronautics in 1925*, that he:

> Built airplane motor 1909–1910; bought and flew Bleriot Monoplane Aug. 13, 1913; rebuilt same into Biplane, 1919–1920; organized Elmira Aeroplane Exhibition Corp. in 1921; reorganized in 1922; did General Flying to 1924; built and flew glider 1920.[35]

Figure 7. A photograph of the rebuilt Bleriot was used in a Hungerford advertisement in Elmira directories in the 1920s.

In the 1990s, Ethel Hungerford, "a distant cousin," recalled sewing canvas for an airplane the brothers were building. Daniel Hungerford asked to use her sewing machine, but "I told him I didn't let anyone use it. I asked him what he wanted to use it for and he said he wanted canvas sewed for his airplane. So I did it." She also recalled that Hungerford used to buy gasoline for his airplanes from her and her husband Fred, who ran a "gas station and lunch room" in Horseheads near the Hungerford flying field.[36]

Elmira Aeroplane Exhibition Corporation: Daniel and Floyd with colleagues in 1921 incorporated the Elmira Aeroplane Exhibition to give "exhibition flights with aeroplanes or other aerial instrumentalities, carrying passengers therewith, general manufacture, buying, selling and dealing in aeroplanes and aeroplane supplies" as well as, in the generalized inclusive terms of many incorporations, to include anything involved with automobiles, boats and "vehicles of every kind and description for the transportation of passengers or goods."[37] With $500 of capital, the four subscribers to the certificate of incorporation were Daniel and Floyd as well as Frank N. Edic (386 ½ E. Warren Street) and George R. Haight (219 South Avenue). Each of the incorporators took five $25 shares and also served on the initial board of directors joined by Lewis Henry,[38] the attorney who prepared the incorporation papers.

George Ross Haight (1897?–?) appeared in the 1920 federal census as an unmarried machinist employed as a "setline [?] welder". The city directory listed him 1920 as a "repairman" boarding at 217 [sic] South Avenue. In 1925, he was a "mechanic" boarding at 850 Perine Street. His youth and lack of attachment to Elmira through marriage or property ownership suggest Haight was an incorporator more on a basis of his enthusiasm for aviation than on his experience or investment.

Edic (1882?–?), mentioned above, had joined Hungerford in the Bleriot airplane project. The 1920 federal census indicated that he was, at that time, a 38-year old, self-employed auto repairer. City directories showed Edic as a partner in an automobile garage in 1915, a machinist at the Willys-Morrow automobile factory in 1919, an auto repairer in 1920 and 1921, an auto salesman 1922–1927, and an auto salesman through the 1930s into 1940.

The 1928 city directory actually had the earliest listing for the Elmira Aeroplane Exhibition Corporation. The field was at "junction Corning rd and Tompkins Corners rd, office 823 W Second." Daniel Hungerford was president, Floyd secretary, and Arthur G. Bingham of Waverly treasurer.

In the 1930 federal census, Bingham, age 46, was a druggist although apparently not a pharmacist. Waverly directories are enlightening. For example, in 1926 Bingham's operation on Broad Street stocked gifts, sodas, candy, and paints as well as patent medicines. In 1930 Bingham was manager of Bingham's Medicine Store in Athens, Pennsylvania. Owned by his wife, Julia K. Bingham, the shop sold "patent medicines and conf[ections]." In 1938 Bingham was running a second-hand furniture store in South Waverly. What aviation interest or other connection to the Hungerfords brought Bingham to be involved in the Aeroplane Corporation has not been discovered here.

An undocumented transcript of a conversation about Chemung County aviation history quotes a man named Griswold about "the Hungerford Field." In response to a question about whether the Hungerfords had their own airplane, Griswold replied, "Oh yes. They always had something to fly. There was usually something [Daniel] was wrestling with. He didn't do as much flying as he did working on stuff. Other people used his field."[39]

Photographing from an airplane in the late winter of 1923 Hungerford promoted a soaring meet around Elmira as well as "part of Bradford County, Pennsylvania." The executive vice-chairman of the National Aeronautic Association of the United States of America contest committee, B. Russell Shaw, acknowledged the materials Hungerford had sent, but Hungerford years later noted, "We got no pay for this great job. Not even a gallon of gas was offered – gas –was - .07–.08 per gallon From- Elmira or Chemung County we – photographed the county . . . from the air – airplane D. D. – F.S. Hungerford D.D.H."[40]

Cleoral Lovell in 1967 wrote that, "My most thrilling excursions as a child were to Hungerfords' Airport with my parents to spend the days watching early flights. The airport was in "Fisherville"—midway between Horseheads and Big Flats."[41]

Jasper Hungerford as a nine-year old nephew told of flying with Daniel Hungerford piloting a biplane. Daniel Hungerford told Jasper to "hang on" as he rolled the airplane a complete circle, that they would have no problem as long as he kept his seat belt on.[42]

An undated newspaper clip from the early 1920s tells of the first flights of an 83-year-old man, Erie F. Vaughn, from the "Hungerford field". "Pilot [Leon] Brink" was the man in charge of the airplane for several Vaughn jaunts. Brink had "carried hundreds over Elmira but finds that with advancing years there is less inclination on the parts of visitors to the field to imitate a bird . . ."[43]

But there were other uses for flying; one involved the funeral of Edward J. Dunn (1866–1927). As president of the Eclipse Machine Company (manufacturing among other products self-starters for automobiles), Dunn had been successful in other businesses, as well. And according to the Elmira *Star-Gazette*, Dunn was "among the community's great benefactors, and Dunn Memorial at St. Joseph's Hospital". On October 26, 1927 there was to be an additional tribute to Dunn "paid from the air."

> It was about 15 years ago [ca. 1912] that, through the generosity of Mr. Dunn an airport was provided for Daniel and Floyd Hungerford, pioneers in airplane building and flying in Elmira. From that

Figure 8. The Elmira Airplane Corporation, probably from the early 1920s, advertised flights. A newspaper article suggested later "there is less inclination on the parts of visitors to the field to imitate a bird . . . "

> beginning the Elmira Airplane Exhibition Corporation developed and is in charge of Mr. Daniel Hungerford.
>
> "Mr. Dunn always took a keep interest in aviation," said Mr. Hungerford, "He always found time to see me when I wished to consult with him on any matter, even when I did not previously arrange an engagement. He told me many a time how he and Mrs. Dunn sat at their home above Clark's Glen and watched our airplanes over the city.
>
> "Leon Brink, of our Corporation, will leave the Hungerford Airport Wednesday at the time of the funeral at St. Patrick's Church, climb to a high altitude and slowly sweep in a high spiral over the church. When the funeral procession leaves for the cemetery, the airplane will lead and at the close of the ceremony at the resting place of Mr. Dunn will drop loose flowers."[44]

In the early 1930s, city directories listed Daniel Hungerford as president of the Elmira Aeroplane Exhibition Corporation with Floyd as secretary and Bingham as treasurer. The corporate office remained at 823 West Second Street with the field at the junction of Corning Road and Tompkins Corners Road. But while the 1936 directory still had a final listing for Elmira Aeroplane Exhibition, the dissolution of the corporation had come from the Secretary of State on December 15, 1934 "pursuant to section 203-A" of the "tax law". It seems likely the Exhibition Corporation was not a lucrative undertaking for any of its shareholders or employees (if any).

Thomas E. Byrne noted that the Caton Avenue Airport operating on the south side of the Chemung River in Elmira since 1927 closed in January 1934. The Elmira Flying Club which had been using the Caton Avenue facility then "obtained a flying field in Fisherville that had been used by Dan Hungerford."[45] This, of course, suggests an end to the Elmira Aeroplane Exhibition Corporation activities by that time.

The Elmira Aeroplane Exhibition Corporation owned at least one aircraft. At a sheriff's sale in July 1930, Hungerford purchased a Waco Model 9 airplane (serial 343) manufactured in 1926. Originally owned by J. Lewis Lovell of Chemung, New York, the plane had been damaged by windstorm "during winter of 1927–1928 in a southern state. Wings damaged and fuselage buckled. Shipped to and under repair at Hungerford Bros garage, Elmira, N.Y. Rebuilt by Hungerford. Ident. # issued 2/2/29. Held in storage for repair charges." On August 14, 1931 Hungerford sold the craft to the Elmira Aeroplane Exhibition Corporation. An application was made for an identification number but this was "not issued due to unclear title. No further information after 11/24/31", according to a National Air and Space Museum listing of historical aircraft.

Daniel Hungerford owned another registered airplane, a Curtiss JN-4C (serial C-1401), which he sold, probably in 1926, to George R. Haight and William Bussey of Rochester. The plane was destroyed in an accident in July 1927.[46]

Many years later, Daniel and Floyd sold items to the Glenn H. Curtiss Museum in Hammondsport including a Curtiss JN-4 and a Curtiss Oriole airplane. Whether the Hungerfords had flown these airplanes is not known but at that point the aircraft were in poor condition and incomplete. The fuselage of the Oriole was the subject of a Hungerford experiment in improved motor vehicle suspension systems described below.

The *Corning Leader* in 1961 reported that an extensive collection of early aircraft components were the gift [sic] of Floyd [sic] Hungerford to the Glenn H. Curtiss Museum of Local History. Included were fuselages from a Curtiss JN-4 (Jenny), Curtiss Oriole (serial 853) and another plane unidentified although with a Curtiss OX-5 engine mount. Additional items included an OX-5 engine, two "Rouen" [Le Rhone?] engines, nine propellers, Jenny wing struts, Jenny stick control units and 25 or 30 OX-5 cylinders "in wonderful condition". The article added that

> Mr. Hungerford, an early flier, owned an airport in Elmira and was employed in repairing planes, etc.

> In 1929, his business failed, and packing all the early Curtiss airplane parts in newspapers, he stored them and larger items in two barns with the idea that he would some day establish a museum to early aviation. His idea never materialized, and although he has been approached by a number of interested individuals throughout the country who wished to purchase his prized stock, he would not part with them until Mr. [Otto P.] Kohl contacted him and explained plans for the museum here [Hammondsport] in the "Cradle of naval Aviation" in honor of the native son who invented many of the items stored.[47]

In 1963, Paul D. Wilson wrote to Otto P. Kohl at the Glenn H. Curtiss Museum about a Clerget aircraft engine in the museum collections.

> If you located the remains of this engine in the Elmira area it may well be a Clerget that was used in an Avro. Dan Hungerford was mixed up in this deal in some manner but for the life of me I cannot recall the details. It seems to me that he owned this Avro but it is possible that he called me for another party. At any rate I went over to Elmira and finished rigging the ship. I then flew it a number of times. There was a novice pilot there who was to take over the flying and I recall that his ship was operated for quite some time.[48]

Eva Taylor noted that the "Elmira Telegram for Sept.11, 1927, [reported] Daniel Hungerford was said to be a recognized authority on the history of early aviation in this area. At the time of the dedication of the Chemung airport he arranged an historic window display at the Iszard [department] store."[49] In 1962, aviation history researchers in St. Joseph, Michigan, Sherwin Murphy and Richard Derrick, exchanged letters with Daniel Hungerford about alleged 1898 powered-flight experiments undertaken by Augustus Herring at St. Joseph. Herring's collaborator and financial backer was Matthias H. Arnot, (1833-1901), of Elmira. Since I had been an intern at the Henry Ford Museum, which had received correspondence from Murphy and Derrick, I visited Hungerford in Elmira to ask if he had any knowledge of Arnot's involvement with Herring, but Hungerford, who already had received a letter from Murphy and Derrick, told me he had no substantive information about the Herring experiments.[50] Daniel did, on another occasion, write to Otto Kohl, curator of the Glenn H. Curtiss Museum, that he and his brother Floyd "knew Mat. Arnot personally." In that letter, Hungerford described a glider built in 1913 or 1914 by Charles S. Teasdale according to drawings made by Arnot before the latter's death.[51]

In 1960 Daniel Hungerford wrote to the *New York Journal American* to remind the newspaper of the upcoming (1961) fiftieth anniversary of the transcontinental air race sponsored by the paper. While the $50,000 prize had not been awarded in 1911, Hungerford said he had "appointed himself a committee of one . . . to celebrate that great man [Calbraith P. Rodgers who came closest to claiming the prize] and event in the old fashioned American manner – and I'll need help and money –. What can and will you do?"[52]

In 1961 Daniel Hungerford writing an end to Hungerford brothers' flight endeavors said they had "maintained a field and carried on until 1927 – then we built and licensed and operated the first jet or rocket car . . . " [53]

ENDNOTES

22 Taylor, Eva C., "Hungerford's Rockets", *The Chemung Historical Journal*, vol. 20 no. 2, December 1974, p. 2447.

23 *Elmira Star Gazette* (*Elmira Advertiser*?), dated December 28, 1965.

24 Daniel D. Hungerford to Keith Marvin, May 22, 1964.

25 Cliff R. Towner to Geoffrey N. Stein, November 22, 1994.

26 Jon Elan Steen to Geoffrey Stein, August 24, 1992. Elan Steen added, "I am sure they [William and his siblings, the children of Daniel and Floyd's brother William] could tell you more than my mother and I, but they are an odd family, and stubborn besides. I know the family was quite embarrassed about all the newspaper stories about evicting uncle Dan."

27 Louis S. Casey, *Curtiss[,] The Hammondsport Era 1907-1915* (New York: Crown Publishers, Inc., 1981).

28 A piece of what may have been a hand-written date appears at the top of the photocopy of the clip seen by the author, "…-16 – 14". Daniel Hungerford noted that his first flight with the Bleriot was August 13, 1913.

29 Daniel D. Hungerford to William E. Dion, July 25, 1961.

30 Daniel D. Hungerford to William E. Dion, August 31, 1961.

31 Undated letter, but a reply from Merrill Stickler, Curtiss curator, is dated August 6, 1975. A postscript again refers to the Hungerfords: "Perhaps the plane they built was replaced with the $2000.00 one." The last may refer to the Bleriot.

32 Keith Marvin, "The Wizards of West Second Street", *Automobile Quarterly*, Fall 1965, p. 195.

33 Joe Kosmicki to Geoffrey Stein, April 13, 1994. The *Star Gazette*, December 28, 1965, said the Hungerfords paid $200 for the Bleriot and had it shipped to Elmira via the Pennsylvania Railroad. Directories from the 1910s into the 1940s listed Stanley Kosmicki as a machinist employed variously by the American Sales Book, Ward-LaFrance, and Eclipse Machine operations.

34 The photographs with Hungerford's inscriptions are in the Glenn H. Curtiss Museum files.

[35] Hungerford in a letter to Keith Marvin, July 15, 1964, asks, "Did I give you one of my photos – riding a glider?" Marvin replied on July 20, 1964, that he didn't have such a picture but would like to have one because of the "heavy connection between rocketry, Elmira and the soaring contest."

[36] Quoted by Tom Page in the *Star Gazette*, June 30, 1994.

[37] The Elmira Aeroplane Exhibition was incorporated by the New York Secretary of State on July 1, 1921. The corporation was dissolved by proclamation on December 15, 1934.

[38] Thomas E. Byrne, *Chemung County 1890—1975* (Elmira, 1976), p. 83, notes Henry (1884–1941) was a "man of distinguished appearance and engaging personality, [who] attained eminence in law, politics and business." In addition to holding county offices, he served one term in Congress (1922–1923) as a Republican.

[39] The three-page excerpt is found among materials collected by David Smith in the early 2000s and given in photocopy form to the Glenn H. Curtiss Museum and to the Chemung County Historical Society.

[40] B. Russell Shaw to D. D. Hungerford, March 27, 1923. Hungerford wrote his comments on a carbon copy of a letter from Malcolm J. Wilson, apparently secretary of the Elmira Chamber of Commerce, to Shaw, March 30, 1923.

[41] Cleoral Lovell to Paul Edward Garber, November 10, 1967.

[42] Stan Hungerford, the late Jasper's son, recalled this story to the author by telephone, August 21, 2009.

[43] Byrne, *Chemung County 1890–1975*, p. 388

[44] This article was copied and written by Cleoral Lovell, who was an editor of the *St. Joseph's Hospital Bulletin*. Lovell sent the copied text along with a letter November 10, 1967 to Paul Edward Garber at the Smithsonian Institution. Lovell noted that the text was from the "ELMIRA STAR-GAZETTE or ADVERTIZER".

I did not find the story; perhaps Lovell did in an earlier edition. A later edition of the *Star-Gazette* for October 26, 1927, said, "During the service at the grave one of the Elmira Airplane Exhibition Company's planes, piloted by Leon Brink, hovered overhead and dropped flowers over the plot."

[45] *Chemung County 1890–1975*, p. 278. There are alphabetical city directory listings for the Elmira Airport Corporation at 1467 Caton Avenue through 1933 with Frederick H. Hill as president. The classified sections of the directories continued the Elmira Airport Corporation under "air transportation" at least through 1936. The only other listing there was the Elmira Aeroplane Exhibition Corporation.

[46] National Air and Space Museum "Historical Aircraft Listing".

[47] The clip is dated October 10, 1961.

[48] October 20, 1963. There is no inside address indicating where Wilson was writing. Daniel Hungerford in a rhyming tribute to the Curtiss Museum and a review of his personal knowledge of early aviation mentions "Your author –took a similar ride in a British Avro – open cock pit –belts fell so low – I couldnet [sic] reach – from Suffern, N.Y. over the Poconos – to Windsor, N.Y. Harold O. (Bull) Nevin – Pilot We—were flying high –oer mountains –rivers – lakes – trees —-. At Windsor we bought oil and gass [sic] – I recovered my belts – quite safe at last—," A photocopy of a November 4, 1923, letter on Elmira Aeroplane Exhibition Corporation letterhead from "Bull" to Daniel Hungerford survives. In the text the author complains of a small bank account and good employment. Another letter exists from Bull, possibly dating from January 1924. In it he wrote, "Wish to God I was flying, sure am sick of it up here as I never was before." The 1920 federal census showed Harold O. Nevin as a laborer on his father's dairy farm in the town of Massena in St. Lawrence County. The 1930 and 1931 Syracuse city directories listed Nevin as an "aviator". The Social Security Death Index showed Nevin lived from 1892 to 1968.

[49] Eva C. Taylor, "Hungerford's Rockets", *The Chemung Historical Journal*, vol. 20 no. 1, December 1974, p. 2447.

[50] Sherwin Murphy to Daniel D. Hungerford, January 9, 1962. In this letter, Murphy refers to a Hungerford letter to "Richard Derrick, city editor of the St. Joseph Herald-Press" from December 27, 1961. Hungerford replied to the Murphy letter on January 12, 1962.

[51] Daniel D. Hungerford to Otto Kohl, April 3, 1961 [The last digit is unclear].

[52] Daniel D. Hungerford to "Promotional Manager", December 8, 1960. A postscript added, "I'm a two-time winner of your puzzle department. D."

[53] Daniel D. Hungerford to William E. Dion, July 25, 1961.

Chapter Three

FAMILY

On August 7, 1918 Daniel Hungerford married Jessie May Hopkins (1892–1981), a former music teacher who since 1916 had served as a recording clerk at the County Clerk's office.[54] Her late father, Isaac N. Hopkins, had worked variously as a watch repairer, a manager of a second-hand store, and an operator of a storage facility. Jessie's brother, Robert N. Hopkins, was a sign painter who resided with his mother.

The newlyweds first made their home at the Hopkins' residence at 106 Guinnip Avenue before moving to 361 Hoffman Street. On August 18, 1918 the *Telegram* reported that Mr. and Mrs. Daniel D. Hungerford had returned from their wedding trip to live at 362 [sic] Hoffman Street "until their new home on upper West Water street [sic] is completed." The newspaper on October 5, 1919 said the Hungerford couple visited with her mother in Tarrytown, Maryland, but would "reside at No. 825 West Second street [sic]."[55] According to directory listings, in 1928 Daniel and Jessie resided at 501 Edgewood Drive and in 1929 at 122 Cleveland Avenue.

Figure 9. Jessie Hopkins Hungerford and Daniel D. Hungerford, ca. 1918.
Photograph courtesy of Mrs. John Schatz.

A surviving photograph from the 1920s shows a pregnant Jessie Hungerford. A caption attached to the image says she was "pregnant with a baby she ultimately lost."[56] However, Jessie and Daniel later became the parents of Shirley Lois Hungerford, born May 21, 1923 at the Wilhelmina Hospital in Rochester.[57]

The Hungerford marriage did not last. The 1930 census indicated that Jessie Hopkins Hungerford was divorced. She resided with her widowed mother, Jennie Hopkins, and her daughter, Shirley, in a South Avenue apartment for which the monthly rent was $30. City directories by 1930 showed Jesse M. Hungerford as a stenographer in 1930 and as a naturalization clerk in the County Clerk's office in 1932. In both directories she was listed as residing at 103 Underwood Avenue.

Figure 10. Shirley Lois Hungerford and a doll, ca. 1927.

Daniel and Floyd Hungerford: Rocket Power, Interstellar Travel and Eternal Life, by Geoffrey N. Stein. New York State Museum Record 4, © 2013 by The University of the State of New York, The State Education Department, Albany, New York. All rights reserved.

Meanwhile, Daniel, Floyd and their mother Mary (widow of William M. Hungerford) resided at 823 W. Second Street. The 1930 federal census actually listed three sons, machinists Daniel, Floyd and William J., as living with their mother at a house which was valued at $8,000. The oldest brother, the widowed William, who did not live long in that house,[58] was employed by an auto manufacturer (likely Willys-Morrow) while the younger brothers operated the garage.

In 1992, Shirley Hungerford Hyde wrote about her parents and the Hungerford family:

> Daniel D. married Jessie M. Hopkins on August 7, 1918. I am their daughter. I was born on May 21, 1923 (so I was six years old [when the rocket car was built], not eight as reported by Mr. Marvin's article.)[59] They separated when I was about five and divorced when I was in my late teens. Neither ever remarried. It was not a traumatic family break for me since Dan and Floyd were always deep into some project at their garage or the house on W. Second Street [,] where Floyd and their mother lived (and Dan after the break-up). I never lived there as reported. During the five or so years of my life prior to the separation, Dan, my mother and my maternal grandmother always had a home of our own. I cannot remember the circumstances as to the time when he returned to live on W. Second Street. I have only vague memories of his ever having lived with us. I cannot remember his EVER being home to have lunch or dinner or participating in any family-oriented activities.
>
> Both Dan and Jessie were soft-spoken people. He did not, as the articles indicate, ever swear, drink or smoke. There were never any harsh words between them in my presence and we saw him on occasion after the separation and divorce. Dan was a very handsome young man. This fact did not escape the notice of women other than my mother. Nor did he discourage them. I can remember one with whom he tried to promote friendship with me. I have a fine studio portrait of him taken probably in the '30's.
>
> I was told that Floyd was engaged to a girl as a young person but she died and, as far as I know, he was never involved with anyone else. His weakness WAS drinking, I guess. I generally could smell it. He was always very nice to me. I have the feeling that both he and Dan and their mother were amused by my occasional presence, but they were not involved in my life in any other way.
>
> My mother was Deputy County Clerk of Chemung County and Naturalization Clerk. She was with the Clerk's Office for over 40 years. She maintained her own apartment in Elmira until November of 1980 [,] when she came to Hendersonville [North Carolina] to make her home with us. She had a massive heart attack in January of 1981 and needed round-the-clock care until she died (on my birthday) May 21, 1981.[60]

Shirley Hungerford in 1945 married her "childhood sweetheart," Norman R. Hyde, a fighter pilot in World War II. The Hydes left Elmira, although on visits to their home town, Shirley would "occasionally take essential supplies to Dan and Floyd on W. Second Street. It grieved me to see how they lived. Mother would go with me once in a while."

David Smith, who in the early 2000s researched the Hungerfords with an eye to making a documentary movie, related to me that Shirley Hyde told him of her estrangement from her father. She said he was a handsome man, and the women in Elmira knew it. His philandering for which Shirley Hyde did not forgive him precipitated the failure of their marriage. When Daniel asked her for money to pay past-due real estate taxes, she refused him.[61] In 1979 Schuyler Lathers related he knew Hungerford was "friendly" with Dr. Miller, a chemistry professor at Elmira College. He "kept her company some".[62] Lathers told another writer that he was attending the college, where the "woman science

Figure 11. Mary Ward Hungerford and her three sons, left to right Daniel, Floyd, and William, probably were photographed ca. 1940.

instructor with whom Dan was 'keeping company'" introduced the two men.[63] George Mapes related that after his father died Hungerford visited George's mother, Gertrude W. Mapes, a few times. These "platonic visits" ended the relationship, he adds, since she had no serious interest in Hungerford. Still he was a good looking man.[64]

Shirley Hyde maintained an interest in aviation. For a number of years she worked as an associate editor for *Flight Control*, a publication of the Bendix Aviation Corporation, and wrote about aviation history. In particular, she recalled an article of Blanche Stuart Scott, a pioneer pilot, which Scott said was the "only accurate reporting ever done about her." Ironically, Shirley Hyde never flew. She recalled that as a small girl "I was placed in the cockpit of a two-place plane while my father and someone spun the prop to get it started. I was VERY frightened." Later she was preparing to fly with her husband "at Majors Field in Greenville, when a student crashed and went up in flames . . . .I did not go up. I did have a brief ride in a DC-3 once when it taxied to refuel. That is the extent of my flight experience. Never left the ground."[65]

Jon Elan Steen, the grandson of the third Hungerford brother, William, related in 1992 his memories of his great uncles on West Second Street. "I went there quite often as a child. Great uncle Floyd had the personality of a dumpling and said just about as much as one, but I guess he was almost as brilliant as great uncle Dan. Uncle Dan, now him I remember better, at least he seemed to have some personality, although he said little to me personally. I was only 8 or 9 years old at the time."[66]

In 1979 Marvin stated that Hungerford "was an amazing man in many ways and was the first really solid clairvoyant I ever met. Mr. [Ralph L.] Hodge and I both visited him at his home . . . in 1964.[67] A few weeks later, Marvin added, " . . . they [Daniel and Floyd] were regarded as eccentrics and rightfully so, but in Dan I believe there was true genius. Properly channeled and with the proper leadership, he might have gone far in his field."[68]

Marvin also wrote

> Dan Hungerford was a wizard in the true sense of the word. He had a fully-developed sixth sense which, had I not witnessed this, I could not believe. There were many in Elmira with whom I talked who feared him because of this. His mathematical formulae was [sic] absolutely on target although when I showed this to mathematicians in colleges here, they asserted that they had never seen anything as perfect or highly developed. And this for a third grader![69]

In the spring of 1964, Hungerford wrote to Marvin about "automatic writing", a means of extrasensory communication with entities both living and deceased. So Hungerford noted that:

> I . . . have had a copy of Basil King's – the abolishing of Death – 1919 for a long time but couldn't read it until my brother Floyd passed away – so suddenly at last Xmas time.
>
> In the book a young lady – is furnishing material thru a process of automatic writing.
>
> I'm hoping you've had some experience along this line, and I'm enclosing a copy of article from local paper – and for the first time in my life – am trying several nights in a row. I sleep sitting up in a chair – girls picture in one had Pencil in the other – Paper on a board in front of me. It was scarry [sic] the first two or three nights. So far is only – chicken tracks – yet some what intelligible. I'm hoping I can get a picture of the murder – maybe you can help...
>
> You will notice I'm living Floyd's life Too.[70]

Ritchard E. Lyon, minister at the First Baptist Church in Elmira, officiated at the funerals for both Daniel and Floyd Hungerford. Yet their later adult lives appear to have been mostly non-religious. To be sure, churchgoing would have been expected in rural Pennsylvania in the late nineteenth century. Hungerford later referred to Jesus in his writings, since Christian thoughts were part if his life. For example, in a September 1966 letter to Henry G. Budd, a minister whose protest against legalized gambling was published in the *Star-Gazette*, Hungerford displayed a comprehensive knowledge of Biblical stories.[71] But in a statement titled "Our Philosophy of Life" dated August 23, 1962 he wrote ". . . we are here for no reason of our own -? – why not make the best of it? And recognizing the destiny of man – as – involving the conquest of space – occupation of the stars – and the attainment of eternal life – on this side of the grave . . ."[72]

Hungerford professed to possess extrasensory perception. In a letter to Marvin, he told of attending a funeral in Syracuse in January 1929. After witnessing a "dispute between a man and his sister" there he returned to Elmira by car. Rain and an icy road made his return trip a terrible experience. "That night at home I dreamed I saw an army plane crash over Pennsylvania – 8 men died, the next day the paper carried the story just as I had seen it."[73]

Late in his life Hungerford wrote of a conversation with his friend Russell Barr, who had driven him to a hospital in Montour Falls, returning in a rainstorm.

> I had talked to Barr about mental powers. He laughed at me for years about that. I was so dam [sic] mad about the whole thing [eviction from his Second Street house] I said to Barr – I hope lightning strikes the Star-Gazette – They have been against me all thru this thing – I – made it stronger than hope. I – practically demanded it. It did – Lightning struck the Star Gazett [sic] in that storm-Smashed a power transformer in the basement and filled the building full of smoke.- Every body ran out of the building in to [sic] the rain it was pouring – Barr – was amazed – Said Dan I'm convinced you have something I don't.
>
> For weeks and weeks I've been clinching my left fist and saying to my self – I want terrible power from where ever. I look to the sky – smashing of city hall and the Star – Gazett [sic]. And the quicker the better. The authorities would send me to Binghamton [to the state psychiatric facility] if they knew . . . [74]

Certainly the closeness of the Hungerford brothers is remarkable. They lived together for almost twenty years after sharing their house with their mother for a decade and a half before. Marvin claimed that if a client requested a repair from Daniel, "and Floyd happened in while Dan was out he'd know instinctively what to do and then do it, or vice versa." Marvin said a "clairvoyant understanding between the two brothers, which astounded many and frightened others, manifested itself in everything that concerned them." Marvin said that letters signed after Floyd's death "Daniel D. and Floyd S. Hungerford by D.D.H.", were aware that his brother is dead, but [he] maintains that through some sort of extrasensory perception, Floyd lives on in him."[75]

Two months after Floyd's death, Daniel Hungerford wrote in a small notebook:

> This was Floyd's book. . . . About midnight Feb.15-16-1964 awake – in a bad state of mind – and indigestion – hot flashes & chills – then three (3) knocks – in close succession come – like on the kitchen door – waited no more knocks
>
> 2-16-64 about a week ago I dreamed Floyd –Bill H. were sitting on a bench somewhere – I came and sat down between them my first dream of Floyd, since he passed away.

ENDNOTES

54 Undated newspaper clip reports she began work at the county clerk's office on January 18, 1916. She was deputy county clerk from 1937.

55 October 5, 1919.

56 The image and a caption were given to the Glenn H. Curtiss Museum by researcher David Smith, who did not indicate a source for the photo or the data.

57 A "geocities.com/smithistory" website notes that the Wilhelmina Private Maternity Hospital operated from 1919 to 1947 at 1259 Lyell Avenue in Rochester. A ViaHealth website states that the hospital provided "private maternity" and adoption services.

58 His wife was Grace Little, according to William's granddaughter Joan Hungerford Schatz.

59 The index to New York State vital statistics records Shirley L. Hungerford's birthday as May 21, 1923 in Rochester. Keith Marvin in a 1974 taped reading of a draft of his first history of the Hungerford brothers and their rocket car claimed Shirley was Daniel's adopted daughter. Perhaps this explains the Rochester birthplace. Marvin in a September 20, 1992 letter to Geoffrey Stein wrote, "Actually, she was Dan Hungerford's adopted daughter…." Shirley Hyde in correspondence with this author always identified herself as Daniel's daughter with no qualifiers before the noun. Marvin's data likely came from conversations with Daniel Hungerford in 1964.

60 Shirley H. Hyde to Geoffrey Stein, September 9, 1992.

61 David Smith to Geoffrey Stein via telephone, September 13, 1992.

62 Schuyler Lathers to Geoffrey Stein in conversation, August 9, 1979.

63 Peg Gallagher ("Moonstruck", *New York Alive*, March/April 1986, p. 52) noted that Lathers lived in Elmira Heights from 1935 to 1940.

64 George Mapes to Geoffrey Stein via telephone, November 9, 2009. Gertrude Mape's sister was Emma D. Dickson, who lived on First Street next to the Hungerford house on Second Street.

65 Shirley H. Hyde to Geoffrey Stein, September 9, 1992.

66 Jon Elan Steen to Geoffrey Stein, July 30, 1992.

67 Keith Marvin to Geoffrey N. Stein, "Easter Day, 1979". On February 22, 1992, Marvin wrote to Kevin R. Hungerford, a distant relative of Daniel, "He was one of the only two actual clairvoyants I ever met and the fact that he did have supernatural power in this line cannot be refuted to anyone who knew him and my own personal experience changed a good deal of my beliefs on the existence of this sixth sense. His late brother, Floyd, was similarly endowed, but he had passed on before I went to Elmira to visit Dan."

[68] Keith Marvin to Geoffrey N. Stein, July 3, 1979.

[69] April 4, 1995.

[70] Daniel D. Hungerford to Keith Marvin, May 26, 1964. Marvin on May 28, 1964 wrote in reply that he "didn't know very much about" automatic writing.

W. B. Basil King, (1859–1928), was a Canadian-born, Episcopal priest who lived in Cambridge, Massachusetts. *The Abolishing of Death* (New York City: Cosmopolitan Book Corporation, 1919) deals with communication by deceased individuals who guide pencils held by living persons serving as passive messengers. King suggested that from the earth, people move to another plane of existence. Furthermore, with appropriate understanding and approach, the living can communicate with those who have left their mortal lives.

[71] Daniel D. Hungerford to Henry G. Budd, September 28, 1966.

[72] A copy of the handwritten statement was made available to the author by Linda Hungerford Lathrop.

[73] Daniel D. Hungerford to Keith Marvin, July 15, 1964. The crash of the triple engine Fokker C-2 occurred at Royalton, Pennsylvania on January 11, 1929. See unidentified newspaper clip at www.arlingtoncemetery.net/hrangell.htm

[74] Daniel D. Hungerford to "Ed & Helen", August 26, 1966.

[75] "Wizards of West Second Street", p. 195.

Chapter Four

THE HUNGERFORD ROCKET CAR

While there is only one Hungerford rocket car, there were other rocket cars. The Hungerfords in the 1920s knew about developments of rocket-powered automobiles, sleds, and aircraft. Daniel Hungerford told Marvin in the 1960s that, "rocket cars were being tested in Germany with some success and we couldn't see why it couldn't be tried here as well, so we decided to build a working model." This was in the early fall of 1929.

> Our idea as we went along was to construct a second pilot model if the first one was as successful as we thought it would be, then we considered trying to build a rocket ship which might reach the Moon, but we never got any further on this than having a picture painted by a sign painter we knew. It was bout this time that we had our stationery printed and this is where 'interstellar' fit in.
>
> Floyd and I then decided that if the rocket or rockets worked out as expected, we'd go into the business building cars with rocket engines. Our idea was to construct the first one in a sort of cigar shape . . . and then work the other one up as a conventional sort of design.
>
> We never drew any plans or diagrams for this because we never got as far as the second prototype. We simply spent all our time trying to promote the car we had.
>
> What I visualized was a car of about the Buick size with the rocket exhaust pipe or pipes running under the frame of the body and with the tail protrusions directly under the rear bumper. Of course, the gasoline tank would have had to be placed somewhere up front under the hood or under the seat to avoid any conflict with the exhaust mechanism at the rear.
>
> We'd call the car the Hungerford Rocket and if we built one or two of the conventional appearing cars and could interest some people around the area—Elmira, Horseheads or Binghamton—to back us, we'd look for a small factory and begin serious production.[76]

The Hungerford brothers learned from other inventors' work. Igor Spajic (1998) notes the influence of Hermann Oberth's *Rakete zu den Planetenraeumen* (The Rocket into Interplanetary Space) published in Germany in 1923 and translated into English. Another Central European experimenter was the Austrian Max Valier (1895–1930). Author of several works on astronomy and space travel, including *Auf kuehner Farht zum Mars* (1928), *Raketenfahrt* (1930), and *Der Vorstoss in den Weltenraum* (1923).[77] Valier worked with solid-fuel vehicles before turning to liquid fuel, an explosion of which took his life. Perhaps the Hungerfords encountered Valier's printed work. Certainly his name was prominent in the print media. In any case, they telegraphed Valier's widow after the death claiming, perhaps somewhat immodestly, "We are inspired by the vastness of his ambition and will carry on."[78] Marvin observed that the Hungerfords stuck to low octane gasoline rather than the "liquid oxygen" that proved fatal to Valier.

Marvin suggested that the first automobile owned by the Daniel and Floyd was a second-hand 1911 Cadillac, "update[ed] with a newer body". Another Cadillac followed with the same treatment.[79] In 1918 Daniel Hungerford's Overland touring car was destroyed by a train on the Erie tracks at First Street.[80] Acquaintances recall a 1924(?) Model T Ford speedster and/or 1924 Model T Ford touring car, 1933 Plymouth, 1936 Nash, a 1930s Terraplane and, the last car operated by Hungerford, a 1935 Pontiac. [81] In short, the Hungerford rocket car was a special machine never intended to replace its more quotidian cars.

For their one and only rocket car, the Hungerfords started in September 1929 with the acquisition of a 1921 Chevrolet 490 touring car. The brothers and their colleagues in the project eliminated the body but utilized the chassis and running gear. In brief, the vehicle could be operated using the original engine, transmission and rear-wheel drive. For rocket propulsion, the car was accelerated using the Chevrolet engine. Once underway the gasoline-fueled rocket

Daniel and Floyd Hungerford: Rocket Power, Interstellar Travel and Eternal Life, by Geoffrey N. Stein. New York State Museum Record 4, © 2013 by The University of the State of New York, The State Education Department, Albany, New York. All rights reserved.

was fired using a spark plug. Then, said Daniel Hungerford, "you would start to go like hell."[82]

In 1964 he wrote,

> It was October – 1929 – year of the great depression. We secured strips of wood and sheets of cardboard 1/8" thick – The chassis was a 1921 chevrolette [sic] – brought to us by our Ashman Mr. George Reeves – from the late Mr. F. Brockway Blossom – local Banker – all disassembled. My brother Floyd S. and John Emery Botsford had reassembled the chassis and were going to mount a buzz saw on it – to saw wood. Instead we built the body and the Rocket motor and installed them.[83]

Marvin learned from Hungerford that construction of the car was rapid. The framing for the body required ten days. Completion of the whole in its initial guise took only four weeks in "a small, red wooden shop located at the rear of their neighbor's adjoining property."[84] Some 35 years after the fact Daniel Hungerford wrote that his then next door neighbor was "dumfounded [sic] yesterday to learn we built the Rocket Car body in his garage. I have no photo of that."[85] Marvin also noted that the builders in those four weeks worked non-stop, halting only to eat.[86]

Covering for the car's body was a "simple thick cardboard" selected so that "in the event of emergency" Hungerford could kick his way out, a process practiced twice in the early days of rocket-propelled experimentation with the machine.[87]

The rocket engine first utilized a fire-clay lined, iron cone. An undated newspaper clip described Hungerford's problem with the lining. He reportedly had been "working for months on the perfection of a rocket automobile. He thought he had the contraption almost ready for a demonstration this week, when he discovered a flaw." The "explosion block" operated "successfully" being fueled by a rotary pump. But,

> [k]eeping the expansion chamber cool is the problem Mr. Hungerford now faces. He procured a fire clay, which a molder said would withstand great heat, but after a trial the clay was reduced to a liquid and the metal cover of the expansion chamber badly burned.
>
> "I hope someone knows of a clay that will withstand heat of 4,000 or 6,000 degrees, Mr. Hungerford said. "I do not want to put a water jacket on the expansion chamber, but it may be necessary."[88]

The three other cones at the rear of the car are dummy engines. Hungerford told Marvin the extra tubes served as a "snare and delusion" as did dummy smoke stacks on ocean liners. "Dummy stacks may have not done anything practical in moving the ship, but they certainly spelled prestige," said Hungerford.

Figure 12. Daniel and Floyd held their rocket engine, the device installed in the rocket car. The image dates about 1930.

With the single rocket, the car broke seventy miles per hour. Hungerford said, "It nearly became airborne. I often wondered how fast I might have driven it had it been a Locomobile or Pierce-Arrow chassis and with all four pipes in action."[89]

The rocket car evolved during the years of Hungerford ownership. George Mapes remembered a replacement radiator was installed so that the lower unit allowed the driver to have a better view to the front. Mapes did not remember the maker of the replacement radiator although he knew it was not a Waco.[90] Marvin said the new engine radiator added greater capacity than the original Chevrolet part. Marvin also mentioned a carborundum lining for the rocket engine successfully replacing the previous fragile lining. Additional windows were added in the early 1930s. Larger rear wheels were added from a 1937 Chevrolet.[91]

The continuing development of the Hungerford rocket car also prompted components to be improved by companies supplying the Hungerfords. While an initial 300 R.P.M. pump injected gasoline into the rocket engine, later a high speed (ca. 1,750 R.P.M.) Gould pump improved performance for the Hungerfords. Hungerford wrote in 1964 that on a return visit with the rocket car to the Gould Pump Company in Seneca Falls, he had learned from the chief engineer that "since we

rigged this Pump for you – we have developed a new High Speed Turner 1725 R.P.M."[92] Later, in pointing to the positive influence the rocket car had had (contrary to Marvin's suggestion that the overall effect on the world was a negative), Hungerford noted the "Gould Pump Co. built high speed pumps only as a result of the pump they built for us. Up to that time the pump they built . . . was turned by Hand Crank Speed about 200 RPM. Their new pump was a Herring bone – type Cam and was direct driven from the end of the motor shaft at 1725 R.P.M."[93]

Marvin noted that "cams and gears" inside the rocket engine were "specially made of bronze after it was found that the cast iron would break. The carburetor was neatly connected with the bottom pump which carried the fuel, cutting into the main gas line." He also recorded that the Hungerfords rigged the service and emergency brakes with a "series of pulleys" to operate together, assuring "dual braking power if and when needed."[94]

While the first rocket car body consisted generally of a basswood frame covered with cardboard and perhaps linoleum, the single door on the right side was of sheet steel (remaining on the car in 2013). Marvin reported that the car at various times was painted black, white, and silver.[95] Dummy tanks eventually were fitted along the sides of the body. Crossed, illuminated flags and even motorized toy tops on the roof gave a science fiction appearance in the 1940s. Marvin reported "two small portable seats"; there is only one such seat in the car at present (2013).

Hungerford told Marvin the time, labor, and parts probably made the cost of the rocket car about $50,000. Marvin noted that the vehicle "traveled thousands of miles, and as one year succeeded the other, the car that had begun as a 1921 Chevrolet took on an identity more and more its own."[96]

The rocket car was soon named as Shirley Lois "The Moon Girl" for Daniel Hungerford's daughter. With the Hungerfords' first run on Elmira streets, November 2, 1929, the Chevrolet engine—not the rocket—powered the vehicle.[97] Daniel later observed that "License plates and insurance was [sic] not so difficult as now, so we used our car plates and without insurance for testing, etc., for a time – being very careful not to get in trouble."[98] Marvin said the Hungerfords were "hoping we wouldn't be caught. And we never did, but we decided that it was bound to happen sooner or later . . ." What followed was a dilemma for the County Clerk's office, which after consulting with the state's licensing officials in Albany, issued a registration for a "rocket type" vehicle.[99] In 1932, the license plate number was "4J-74-78."[100]

In 1964, Hungerford described the operation of the Moon Girl to Marvin, who wrote:

> a motorcycle sprocket was mounted ahead of the flywheel which, in turn, connected with a chain which was attached to a connecting apparatus. Once the chain was attached, the clutch of the car became inactive and the gearshift could be used without the clutch. As Daniel Hungerford explains, "Once the car is converted to a rocket vehicle, you shift your gears without clutching and it takes off much like a standard car. By the time you shift into high, a valve between the main gasoline line and the carburetor is activated by the driver who simply throws a switch, cutting in the spark coils. And then you really start moving as the rocket power takes over."[101]

Hungerford said another time,

> . . . we always used the clutch in the Shirley Lois – and shifted the gears regular, as you will see by a quick look at same – get in the Rocket – and check for your self [sic]. The sprocket head of the Fly Wheel is 3 times larger than the sprocket on the pump shaft. 2000 R.P.M of the engine gives 6,000 to the pump – peripheral speed of pump cams 5" diam. – 2- 70,000 [90,000?] ins. Per. minute once the chain is installed. The pump runs all the time the Engine - does[102]

Perhaps the earliest image of the rocket car, likely dating from late 1929 or early 1930, shows the names "Botsford" and "Albee" in addition to "Hungerford" painted on the side. "Albee" was John Albee. According to an undated note with no attribution attached in the files of the Glenn H. Curtiss Museum, John Albee of Freeport, Long Island, New York "worked with Dan Hungerford and owned our [the Curtiss Museum's Curtiss] Oriole [airplane] . . . . Helped Dan build rocket car[.] Also Davis [sic] 2 cyl [sic] opposed was used in the Bleriot he bought in 1913 . . . "[103]

The 1930 federal census listed a 20-year old John R. Albee as a chemist who worked at the local Dairymen's League Cooperative Association facility and resided with his parents in Elmira Heights (the father being League division superintendent). For the 1937 Elmira city directory (the last of his listings), John Albee was shown as employed by the Dairymen's League in New York (City) while maintaining an Elmira address. The 1955 and 1960 Nassau telephone directories listed a John R. Albee living at Freeport. The Social Security Death Index indicated Albee (1909–1984) last lived at Zephyrhills, Florida.

J. Emory Botsford, whom Hungerford identified as a colleague in the rocket car project, was listed in the 1916

Figure 13. This photograph of the Shirley Lois "The Moon Girl" rocket car probably dates from late 1929. In the photo Emory Botsford stands behind the car. The "Open to U.S.A." sign notes that Fritz von Opel, who had experimented with rockets in Germany, arrived to spend a period in the United States learning about General Motors automobile manufacturing. Notable is the dearth of windows on the side of the body. With the driver sitting adjacent to the single opening there, one can only imagine the difficulty one would have in recognizing any cross traffic at an intersection.
This figure is courtesy of J. Royce Hunt, Botsford's grandson.

city directory as an employee of the Willys-Morrow Company, an automobile manufacturing operation. After several intervening jobs, Botsford was shown for 1923 as an employee of the Hungerford Brothers, while boarding with his father on West Church Street. The following year, still associated with the Hungerford Brothers, Botsford had a home on Lovell Avenue. Next his profession was "salesman" with no place of employment given, although a year later he was the used car manager at the Blackstone Motor Company, dealers in Chrysler and Maxwell cars at 259-63 State Street. For 1927, he was an auto mechanic, and later directories continue to identify Botsford as an auto mechanic. Those for 1938 and 1940 show "auto rpg Lovell av h do" [auto repairing Lovell Avenue home ditto].

Eva Taylor quotes Talitha Botsford about the latter's brother Emory, "also a mechanic, and that the Hungerford rocket car was sometimes parked in front of their [West Church Street] home. As a teenager, she was embarrassed by this. Now she says, 'Wasn't that silly? Today I would be proud.' However she may feel about it now, the youthful reaction is interesting to us as an indication of the general attitude toward Dan Hungerford during his busiest years in Elmira."[104]

Botsford's grandson in the J. Royce Hunt's website (2004) claimed his grandfather "modified the chassis and built the body" while the "four rocket engines"[105] were built by Daniel Hungerford, a pioneering genius in the newly emerging 'aeroplane' industry." The rocket car body was "made of very heavy paper (like dense cardboard, and a material similar to linoleum). Grandpa once told me that the reason for this type of covering was so that the occupants could 'kick their way out' in case of fire or explosion."

Of the lack of general recognition of Botsford's contribution to the rocket car, Hunt said his grandfather "was known as what was called a 'rascal' in those days. He had alienated many in the area, perhaps, including the Hungerfords. He never really got much credit for his amazing mechanical and fabricating skills. He seemed to live in the shadow of his very creative father [perhaps Hunt had Emory Botsford's brother in mind, the architect Hull Botsford] and sister [artist and musician Talitha Botsford.]" Hunt also noted that his grandfather invented a means to allow Coleman gas lanterns burn bottled propane rather than liquid white gas. [106]

George Mapes, who worked with the Hungerfords in the 1940s, has said Botsford was a good friend to him while Botsford and Hungerford "were like brothers." Botsford was an excellent craftsman, and Mapes can "well imagine that he made the body for the rocket car."[107] A friendly exchange of letters between Botsford and Hungerford in the 1960s would suggest that the two men had remained cordial.

The banner on the rear of the body in the Botsford-Hungerford picture, "Welcome Opel to U.S.A.", refers to Fritz von Opel (1899–1971), a German automobile manufacturer and, more importantly for the Hungerfords, experimenter with rocket power. Opel arrived in New York on December 23, 1929 with the expectation of spending "a year in the United States studying the motor industry."[108] While still in Germany, Opel had experimented with both rocket-powered cars and aircraft. Thanks to his wealth and influence, Opel's efforts were well financed, combined efforts of others interested in rockets, and "slickly organized by the media savvy . . . Opel."[109] While dismissive of extra-terrestrial rocket-powered travel ("What would he [man] do when he got there [moon], and how would he get back to earth again?"), Opel saw high speed rocket-powered aircraft making flights from Berlin to New York in three hours.[110]

One wonders how the Hungerford brothers put aside their socialist interests (see chapter five) to honor the work of a member of one of the more successful capitalist families of Germany. Perhaps avoiding politics was an overwhelming desire to communicate with other rocket experimenters. Cliff Towner recalled Hungerford showing him in the early 1940s "letters from both Dr. Goddard and Willie Ley, with whom he had extensive correspondence."[111]

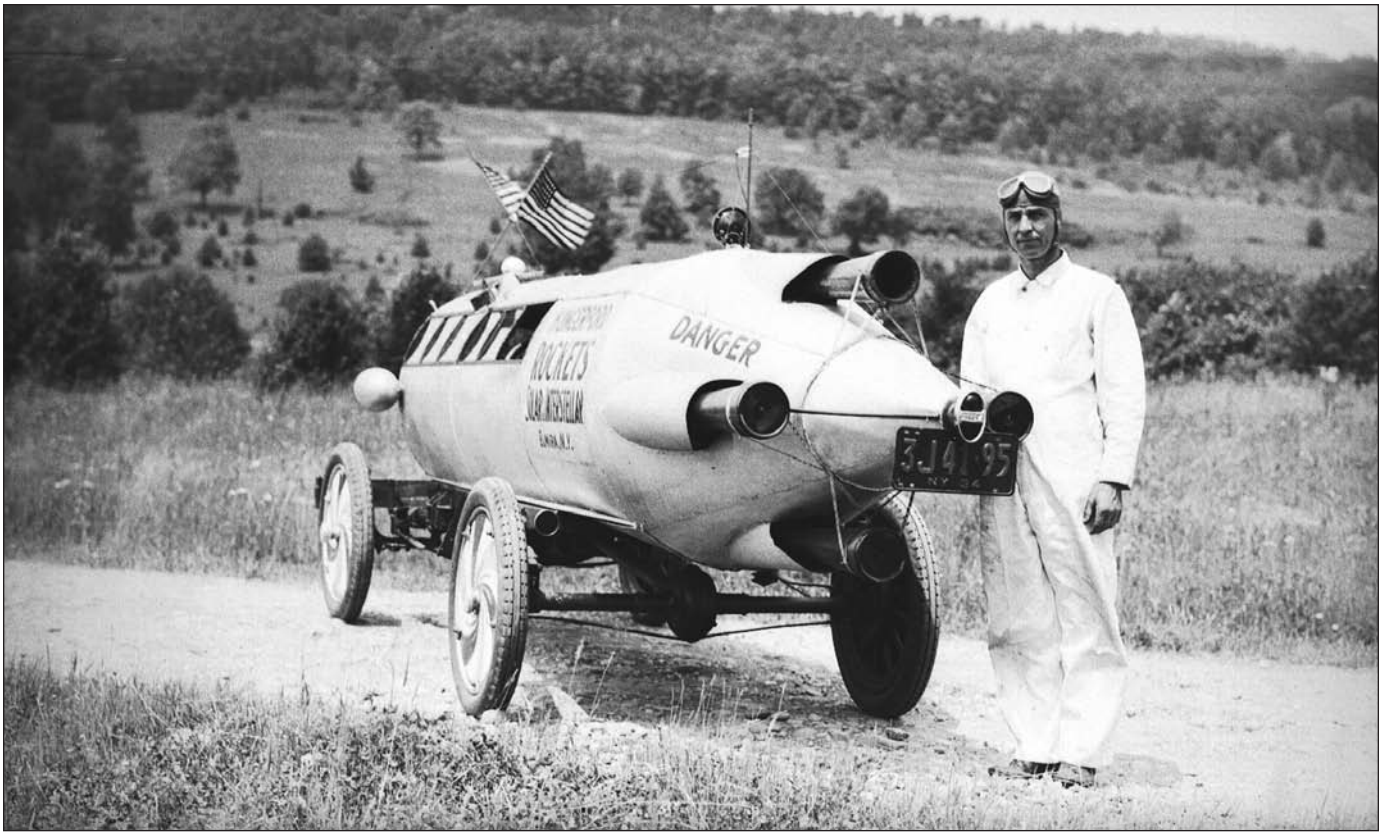


Figure 14. Daniel Hungerford posed at the rear of the rocket car, 1934. A stop light had been located above the license plate.

DEMONSTRATIONS AND PROMOTIONS

For several years, the Hungerfords demonstrated their rocket car at venues such as race tracks and fairgrounds in New York and Pennsylvania; Plattsburgh, Syracuse and Buffalo were among the places where the car appeared. Three decades later Hungerford said they "went on the highway and at airplane meets and auto racing. We didn't enter the races – just demonstrated Rocket power and a new way of life."[112] Cliff Towner said Daniel "often drove his Rocket Car in local parades on the Fourth of July and on Armistice Day, but never under rocket power, of course."

The Hungerfords tried unsuccessfully to arrange for the display of their car at the Century of Progress exhibition in Chicago in 1933 as well as at the New York World's Fair in 1939. They did succeed in getting publicity nationally, although no payment, on January 15, 1934, on the daily Buck Rogers radio program. A Hungerford letter explained the Elmira rocket experiment and praised the radio program's sponsoring product, the Cocomalt drink ("just the ticket for weary scientists after a day's testing with their rocket car"). A reply purportedly signed by the fictional Buck Rogers told the Hungerfords that, "Because of your interest in rocket motors I feel that you are doing humanity a real service. Rocket airplanes, rocket automobiles, etc., will undoubtedly be the next great important development in transportation. They are on the way."[113]

Marvin asked Daniel Hungerford if he had ever tried Cocomalt. "I drank it once." When Marvin asked how Hungerford had liked the drink, he replied "I threw up."[114] Hungerford in a letter alluded to efforts to find other "adv. jobs for the Rocket" beyond the Cocomalt Company ("no luck"). "We tried to get a job with the Spaulding Bakeries in Binghamton, N.Y. No luck. Etc. –etc."[115]

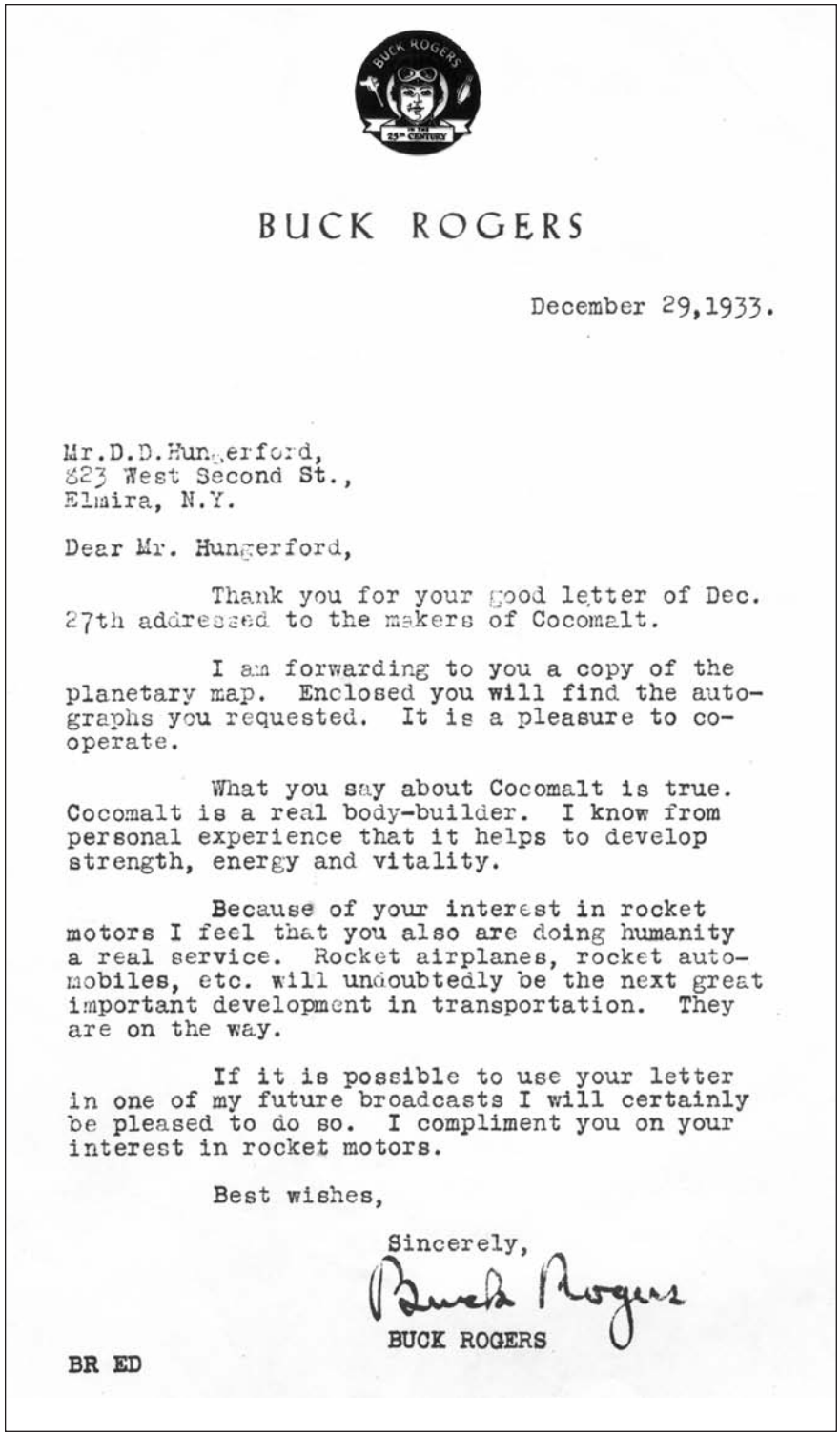
Schuyler Lathers, an acquaintance in the later 1930s, remembered Daniel Hungerford describing the rocket car operation. ". . . he would start with conventional power and build up to about forty-five miles an hour. Then he would light his burners in what he called rockets and then he had enough thrust to disconnect his differential and go to higher speeds. He usually did this at fairs, with someone bellowing out with a loudspeaker as he went around the track."

Perhaps the last documented demonstration use of the rocket engine was that photographed in 1934 at Colussy's Airport in Coudersport, Pennsylvania.[116] Hungerford was accompanied by Charles A. Osman (? – before 1963) inside the rocket car with the temperature reaching 140 F inside the car as it rocketed along the landing field.[117] An undated clip from an Elmira newspaper shows the rocket car in operation at the Colussy Airport. The caption says Osman, "kept one hand on a fire extinguisher, which he was ready to use if necessary. Mr. Hungerford is fitting his car with a larger vaporizing pump to increase the efficiency of his rocket apparatus."[118]

Cliff Towner recalled a story told to him by Daniel Hungerford about being stopped on a return from Coudersport by a state trooper on a motorcycle.

> He said the trooper didn't believe the car would actually run under rocket power and insisted on a demonstration. Reluctantly, Dan said he complied with the trooper's request and proceed to give him a demonstration on the highway. Unfortunately, the uneven roads of the time, combined with the thrust of the liquid fuel, caused considerable vibration resulting in a very large bolt flying through the side of the rocket car and narrowly missing the trooper, who was riding alongside on his cycle.[119]

The Potter County, Pennsylvania *Enterprise* in 1958 noted that the Hungerford rocket car had been the first car "to be licensed by the State of Pennsylvania to operate by rocket power." It is possible the newspaper reporter confused New York and Pennsylvania registration for the vehicle. In any case, after interviewing Daniel Hungerford in 1958, the paper learned that the Hungerford brothers valued the vehicle at "easily a billion dollars" with the Smithsonian Institution having made bid for it. Twenty-fours years before the *Potter Enterprise* ran an advertisement indicat-



BUCK ROGERS

December 29,1933.

Mr.D.D.Hungerford,
823 West Second St.,
Elmira, N.Y.

Dear Mr. Hungerford,

Thank you for your good letter of Dec. 27th addressed to the makers of Cocomalt.

I am forwarding to you a copy of the planetary map. Enclosed you will find the autographs you requested. It is a pleasure to cooperate.

What you say about Cocomalt is true. Cocomalt is a real body-builder. I know from personal experience that it helps to develop strength, energy and vitality.

Because of your interest in rocket motors I feel that you also are doing humanity a real service. Rocket airplanes, rocket automobiles, etc. will undoubtedly be the next great important development in transportation. They are on the way.

If it is possible to use your letter in one of my future broadcasts I will certainly be pleased to do so. I compliment you on your interest in rocket motors.

Best wishes,

Sincerely,

Buck Rogers

BUCK ROGERS

BR ED

Figure 15. In a letter addressed December 29, 1933 to Daniel Hungerford from "Buck Rogers," a writer complemented Hungerford "doing humanity a real service. Rocket airplanes, rocket automobiles, etc., will undoubtedly be the great important development in transportation."

Figure 16. Photograph of the rocket car in operation, July 29, 1934, at the Colussy Brothers Airport, Coudersport, Pennsylvania.

ing the rocket car exhibition was part of a larger "air circus" including stunts, parachute jumps and Cyclone Bill riding a motorcycle through a flaming board wall. The *Enterprise* itself more somberly had noted,

> . . . Dan Hungerford, scientist and inventor, will be present and demonstrate his rocket car. He will explain his purpose in building the car and how it may be used. He has spent a large part of his life in the study of the planets and his machine will be particularly interesting.[120]

A July 2, 1935 article in the *Elmira Star-Gazette* announced a program of ten rockets "in simultaneous flight, rocket-propelled miniature cars, speeding model rocket plans, scientific estimation of rocket velocity and a test of the Hungerford rocket car" at the Caton Avenue airport on the Fourth of July. The affair was to be directed by Daniel Hungerford and it was "expected that a rocket club will be organized . . . ."

> An illustrated lecture on powder and liquid fuel rockets will be given by Mr. Hungerford. He will outline the objectives of the club to be formed and preside at the enrollment of members and election of officers.
>
> Prizes to be awarded winners of several contests will include airplane rides.
>
> Youthful enthusiasts will be required to have parental consent to become club members. The age minimum is 12.[121]

Among the items Marvin received from Hungerford in 1964 was a July 10, 1935 letter to Hungerford from Hayes Schmick (1917–1987), who had "read in the 'Grit' about the new club for rocket enthusiasts which you are starting . . . " Schmick wrote he was interested in rockets "ever since I can remember." With his grandfather, "an inventor with about 250 patents", he had worked on rocket projects but "lacked equipment to complete rocket motor." Hungerford noted on the envelope in pencil, "I answered this letter – and – have among my papers designs of several rocket craft – look for them in the brief [?] cases & et. [sic]" In ink on the letter itself, Hungerford wrote, "June – 8 – 1964 This lad was disinherited by his father for his interest in rocketry. He has a laboratory with several others and they have developed several things *not rockets*. Our club did not materialize. Not enough interest. Daniel D. Hungerford."

As noted above, Hungerford contemplated the construction of a second rocket car, a project perhaps started but certainly never finished; a newspaper story from 1936 reported that Hungerford was "developing a rocket-propelled automobile."[122] Whether this reference was to the extant car or a second vehicle is not made clear. Other individuals, of course, built rocket-powered automobiles. In 1939 Popular Science published photographs of a rocket-shaped automobile which, as the Hungerford car, was started on a reciprocating piston engine before a "booster rocket" was fired. The builder of the aluminum-bodied "Mars Express" reportedly was Peter Vacca of Buffalo.[123]

Shirley Hungerford Hyde observed that Arthur G. Hyde, Jr., the older brother of her husband Norman Hyde, was a "glider/airplane enthusiast, knew my dad also and 'hung' out as a young kid at the garage on W. Second Street. . . ."[124] A Hyde family home (at 738 West First Street in 1944), only a few blocks from the Hungerford shop, facilitated Arthur's visits. In the mid-1930s, the Hyde family had lived on the same block as Shirley Hungerford, her mother and grandmother.[125]

Other young men who found life interesting at the Hungerford garage and machine shop included Cliff R. Towner (1929–1998). Among objects given to Marvin and subsequently donated by him to the New York State Museum was a mimeographed publication, *Rockets New Trail to Empire, Review & Bibliography*, by R. L. Farnsworth (copyrighted 1943 by the United States Rocket Society, Inc. in Glen Ellyn, Illinois). A handwritten notation was signed by Farnsworth in the book recording "Number 384" sold to Clifford R. Towner.[126] A few entries in the Farnsworth bibliography have been highlighted. One wonders if that was done by Towner or even by Hungerford.

Towner noted that he first met Hungerford in the early 1940s "when I was in High School and started a combination Astronomy and Rocket Club. Our Class Advisor suggested Dan as a possible Sponsor . . . . Dan didn't feel he could take the responsibility of Sponsoring our little club, but he extended a very warm and friendly invitation to visit his home and workshop any time and I was quick to accept his gracious invitation."[127]

> Of course in those days, before "Buzz Bombs' and V-2's, Dan was considered by most Elmirans as a local, but harmless eccentric. Elmira College. . . . was still a Women's College . . . and Dan was often invited to lecture there on his theories of Space Travel through Rocketry. In retrospect, I believe his lectures were intended by College officials to offer a "humerous" [sic] interlude to the serious courses. . . .
>
> Our club members were experimenting with solid fuel rockets at the time, mainly using a formula of potassium nitrate, charcoal and sulphur [sic] and Dan's experiments with liquid oxygen as a propellant fascinated me.[128]

Clara McCann, a genealogy volunteer at the New York State Library, speaking to the author by telephone in 1994, said she accompanied her father, Newman Worden, in 1932 or 1933 on a trip from Hammondsport (where he built engines for the Curtiss aircraft operation) to visit the Hungerford brothers in Elmira. Worden was building a "strange car of his own. Sort of pointy at the front. He drove it to Elmira that time." And, McCann added, he traveled to Elmira several other times without his daughter. What engine type powered Worden's car unfortunately is unknown here.[129]

A Hungerford friend to date only identified as "Ed", although likely Erwin D. French (1890–1969)[130] wrote to Daniel Hungerford in the mid-1960s the draft of a letter to the mayor of Elmira as well as to Elmira newspapers protesting the city's eviction of Hungerford from his home on West Second Street. In the course of delineating Hungerford's contributions to the world, Ed noted that "Dan Hungerford, who, in his entire life gave so much time to youth. Many youngsters hung around 823 W. Second St., Dan was their ideal and many went on to success."

Among the youthful aides to the Hungerford brothers in the early 1940s was George Mapes (born 1927). His uncle Rolla Dickson was a plumber with a home and shop on West First Street in Elmira on property abutting the Hungerfords land to the north on Second Street. Floyd Hungerford worked with Dickson as a plumber's assistant, and Mapes spent time with the Hungerfords in their house and shop. While most high school students "were chasing girls", Mapes says he worked with the Hungerfords until late in the evenings repairing automobiles. Since he was interested in electricity and radio, Mapes once repaired the radio in Shirley Hungerford's car. With the work done for the night, the Hungerford crew sometimes would go to an Elmira restaurant for pie with ice cream with Mapes, even as a high school student, paying the check. He reports that he also lent the Hungerfords "a little money."

Mapes' generosity was rewarded. After navy service at the end of World War II, Mapes enrolled at Champlain College in Plattsburgh and traveled in his freshman year via motorcycle. When the Hungerfords learned that Mapes had no car to drive to the college for his second year, they lent him Shirley Lois "The Moon Girl." When Mapes was asked if he had ever tried rocket propulsion, Mapes replied that he did once on a rural road near Plattsburgh. The experience "scared him half to death." But in spite of noise and flames, the rocket's push was minimal and on hills ineffectual. Mapes thinks the rocket car basically demonstrated the principle of rocket power. And he said Daniel Hungerford would have been more successful in his experiments with a better education.

The rocket car as Mapes recalls it had leather padding on a left-side window ledge so that the driver could rest his head there while looking out. While vision on the

Figure 17. Following a period of military service, George Mapes went to Champlain College. The Hungerford brothers kindly lent Mapes the rocket car for travel to and around Plattsburgh. This photo shows Mapes and the "Moon Girl" near a Champlain College building, April 3, 1947.
Photograph courtesy of George Mapes.

right side was limited, there was a rear-view mirror on each side of the car. Two twelve-volt motors turned inverted toy tops on the roof of the car. These tops hummed as they rotated. Crossed American flags on top of the car were illuminated.

When asked if he ever had passengers in the rocket car, Mapes recalled leaving Plattsburgh at the end of the academic year. A roommate from Long Island seated to the right and slightly behind Mapes in the interior of the car accompanied him to Elmira.

Mapes remained in Elmira after his second year at Champlain College. He was recalled for military service during the Korean War. Afterwards he worked for a period at the American LaFrance Foamite Corporation, supervising the experimental station. He left Elmira permanently in 1955, continuing his education in Oklahoma. A thirty-year career with the Atomic Energy Commission followed before retirement in Nevada.[131]

Another regular young visitor to the Hungerford establishment was Robert M. Boyles (born 1930). He lived on First Street near the Hungerford property and bought a couple of cars from the Hungerfords, who helped keep those vehicles running. Boyles recalls a 1924 Ford and a 1936 Nash. The Ford, Boyles has written, was a touring car "used of late to pull out stumps on a farm. It no longer had a canvas top or side curtains, if it ever did have. . . . Dan taught me how to drive and maintain it."

Of the Nash, Boyles writes,

> Dan must have felt remorse at selling me that car in such bad shape. Almost all of the window glass was shot and the oil rings were shot…So we pulled the Nash into my parents one car attached garage, unheated…[for] reboring the cylinders and putting in over-sized pistons. It was the dead of winter.
>
> I say "we worked". Dan was the master machinist with the tools. I was the laborer. . . . The job done, Dad got his garage back and I had a good running fast car with overdrive . . .
>
> I left it home with my folks when I was recalled in the Reserves in September 1950 . . . My folks sold it back to Dan as I recall for fifty dollars, probably about what I paid him for it.[132]

Boyles says Hungerford was "great guy", who treated Boyles as a son. Speaking of Hungerford's socialist interests, Boyles says his friend was a member of the Communist Party, not a help to Boyles when he sought security clearance while serving in the military. But Boyles says he never discussed politics with Hungerford.

Boyles has said Hungerford, when finished shaving would wipe the razor blade clean to prevent rusting. He claimed that the razor blade industry could make a rustless blade but to preserve its market would not. Of plumber's helper Floyd Hungerford, Boyles says he was an alcoholic, "high all the time." Of the Hungerford facility, Boyles observed one would walk through waist-high piles of newspaper to get to the machine shop in the back of the barn. "Dan never threw anything away." Boyles also notes that George Mapes, three years his senior, was a "kind of mentor."[133]

In the 1990s Boyles recalled riding in the rocket car. He told *Star Gazette* writer Tom Page he was pleased the rocket car had been preserved. "But I hope no one ever tries to take a test ride in it again. . . . It provides a very hot and scary ride."[134]

Shirley Hungerford Hyde wrote to the author in 1992, "Just before World War II, Dan was offered a very lucrative job with Bell Aircraft in Buffalo, NY – but he refused. He would never consider working for someone else and/or leaving Floyd. How sad he did not team up with a company which could have provided more sophisticated equipment and access to engineering libraries, etc. Or. . . .backing from some affluent entrepreneur who could channel his talents more productively."[135]

Spajic observed:

> When one considers the Bell Aircraft offer with hindsight, one is left staggered by the irony of this lost opportunity. Bell was not only in the forefront of rocket-propelled aircraft development after the War, but this culminated in the X-1, which broke the sound barrier for the first time. Daniel's refusal rates as a mistake of epic proportions. That symbiotic kinship with his brother that had served him so well, now utterly betrayed them both. For that was the unique talent and tragedy of the Hungerfords.[136]

One Hungerford acquaintance who did go to work in the aircraft industry in Buffalo was Joseph R. Farrell, Jr., who wrote to Daniel Hungerford in early 1942 he was working seven days a week at the factory. Still Farrell maintained an interest in rockets. Instead of constructing an operating model rocket ship, he planned to put a rocket into a small car. He asked if Hungerford could locate "a small Austin Roadster or a coup, or we can use a Crosly [sic] . . . We have looked every were [sic] up here and have had no success. So if you find one find out the price and let us know." In 1964, Hungerford wrote to Marvin on the Farrell letter that "'Red' Farrell was a good boy – Easily taken advantage of. Floyd S. Hungerford – liked 'Red' a lot. Red had a son. . . .'Red' had no home – was a victim of circumstances."[137] Another time Hungerford observed that "Mr. Farrell drove our rocket car on many occasions - and quite on his own [had innovational?] ideas."[138] Farrell and Mapes were the only drivers other than Daniel Hungerford of the rocket car.

In the late 1950s, the rocket car was exhibited "in a local museum – that failed." The likely institution was the Strathmont Museum, which opened in 1958 and closed shortly thereafter.[139] After having the car towed home, Daniel Hungerford became involved in his only rocket car motor vehicle accident. He wrote that he "jumped in drove 3 or 4 blocks to the gas station". There he checked the tires and received gratis two gallons of gasoline. Then he

> Swung out of the station – to the left – coming on my left a car – on my right a parked car – there's a fiber bushing in the steering column this had expanded to make steering difficult. I continued to turn the car stopped or slowed. I struck the left rear fender of the Parked car, a Ford – brushed a chrome strip of the Ford fender – knocked my Right front Hub cap off. Picked up the pieces –drove home (no Plates) was getting in my [other] car to go make amends – when the station manager drove in –said you better get down there. I did – that same night a –second car came of Walnut Street on to Second – swung wide –struck the same fender. Smashed it completely – the Station man – drove in about 10 ocl. – said you won't need to bother to fix the Ford. The second man will do it. I was greatly relieved but didn't do any shouting or clapping of Hands.[140]

ENDNOTES

76 Keith Marvin, "Misguided Missile", *Special Interest Autos*, February 1980, pp 26–27. The "picture painted by a sign painter" likely was Daniel Hungerford's erstwhile brother-in-law, Robert N. Hopkins.

77 American Institute of Aeronautics and Astronautics website, "History–Austria" notes the last title was available until 1930. The Library of Congress catalogue lists nine different Valier titles.

78 Quoted by Marvin, "The Wizards of West Second Street".

79 Marvin, "The Wizards of West Second Street", manuscript version. Emory L. Johnson of Horseheads noted he had a photo of a 1911 Cadillac; the picture was forwarded by Daniel Hungerford "just before he passed away." Emory L Johnson to Paul Garber, October 2, 1967.

[80] *The Sunday Telegram*, September 8, 1918, reported Hungerford was driving the car with his wife, mother-in-law and brother-in-law (Robert Hopkins) on First Street across the Erie tracks. Hungerford told the police the car "was 'drafting' along over the crossing when the train was approaching from the east….He said he became frightened and warned the others to get out of the car in a hurry to avoid being killed, fearing he could not get the car over the tracks in time." The police said he thought he could have driven safely over the tracks before the train arrived. In any case, "Within a few minutes after the accident occurred the police heard a junk dealer was on hand ready to buy the remains of the wrecked automobile." The 1912 Elmira city directory, p. 47, noted the city was the "Home of a large factory making Overland Automobile parts."

[81] H. Steven Sekella told the author in September 2008 that he purchased and retains the 1933 Plymouth. He also bought from Dan Hungerford a 1925 Henderson race car. The last was assembled, not by the Hungerfords, from Henderson motorcycle parts. Sekella recalls "Pete [Oakley], Dan and I tried to rebuild the engine in the Hungerford side yard." Sekella in a November 2008 telephone conversation noted that short on money, Daniel periodically asked Sekella to buy things from him. A rifle was among the items Sekella purchased.

[82] Quoted in Keith Marvin, "The Wizards of West Second Street", *Automobile Quarterly*, vol. IV no. 2, Fall 1965.

[83] Daniel D. Hungerford to Keith Marvin, April 7 (continued on April 28), 1964.

[84] Keith Marvin, "The Wizards of West Second Street".

[85] Daniel D. Hungerford to Keith Marvin, May 20, 1964.

[86] Keith Marvin reading an expanded draft of his article in a tape recording made in 1974. The author made notes after listening to the tape on June 6, 1992.

[87] Marvin, "The Wizards of West Second Street", p. 193.

[88] Unidentified, undated newspaper clip, "Car Rocket Lining Can't Stand Heat – Inventor Hungerford of This City…"

[89] Marvin, "Misguided Missile".

[90] George Mapes to Geoffrey Stein, October 25, 2009. Keith Marvin had recorded the replacement radiator as a Waco.

[91] Keith Marvin, "Misguided Missile", *Special Interest Autos*, February 1980.

[92] Daniel D. Hungerford to Keith Marvin, April 7 (continued on April 28), 1964.

[93] Daniel D. Hungerford to Keith Marvin, August 27, 1964

[94] Marvin, "The Wizards of West Second Street", manuscript version p. 20. Marvin did not elaborate which "cams and gears" were replaced, but George Mapes has related the parts were for the Gould pump. George Mapes to Geoffrey Stein, October 25, 2009.

[95] Marvin, 1974 tape recording.

[96] Marvin, "The Wizards of West Second Street", manuscript version p. 19.

[97] Marvin, "The Wizards of West Second Street" Tom Page in the *Elmira Star-Gazette*, June 26, 1994, quoted George Hodge of Horseheads, who said, "I believe it was first tested on Westlake Street in a field off Gardner Road." Hodge's uncle, Ralph Hodge, eventually acquired the rocket car as described in a later chapter.

[98] Daniel D. Hungerford to Keith Marvin, April 7 (continued on 28), 1964

[99] Marvin, "Misguided Missile".

[100] Marvin, "The Wizards of West Second Street", manuscript version, p. 19. The car was last registered for 1952 and retains (2013) that license plate in the rear.

[101] Marvin, "The Wizards of West Second Street", manuscript version, p. 17.

[102] Daniel D. Hungerford to Keith Marvin, July 15, 1964.

[103] Actually it was a Detroit Aero Engine that powered the Bleriot. The note at the Curtiss Museum further quotes Albee indirectly about the Oriole's flying characteristics. It would, reportedly, slide slip as fast as it would go forward. It was a tricky ship to fly and prone to ground loop. Albee had "a CG in it".

I initially assumed the "Albee" represented in the lettering on the side of the rocket car was Robert C. Albee, who first appears in the Elmira directories in 1919 as the manager of Wolcott Motor Company and later was president of the Albee Motor Company, Inc. While I had thought Robert Albee might have been the source of the Chevrolet car, George Mapes related by telephone on July 24, 2008 he thought not. Daniel Hungerford identified the source of the automobile, "…our Ashman Mr. George Reeves – from the late Mr. F. Brockway Blossom…" See page 33.

[104] Taylor, Eva C., "Hungerford Rockets", *Chemung Historical Journal"*, December 1974, p. 2446.

[105] Actually there is only one operational rocket engine. The side and bottom tubes are dummies.

[106] "Being rather naïve in big business matters, he simply sent the plans for his invention to the Otto Bernz Corp., with an offer to sell the system to them. OOOPS!!!...Needless to say, there was no offer for compensation and, miraculously, the 'Bernz-a-matic' propane lantern hit the market shortly thereafter."

[107] George Mapes to Geoffrey Stein via telephone, July 23 and 24, 2008. The wording in the quotes is approximate based on Stein's recollections of the conversations.

[108] *New York Times*, December 24, 1929. Opel had visited the United States earlier in the year arriving in New York on April 20 also to "make a study of American methods in manufacturing motor cars." The Opel concern had been acquired by the General Motors Corporation but "the Opel family still retained a financial interest in the concern, and the factory would remain in the hands of the German operators" according to the *Times*, April 20, 1929. At that point the Hungerford rocket car had yet to be constructed. The wintry setting of the Botsford-Hunt photo suggests a later date as well.

[109] "Fuer grosses Aufsehen sorgten seine Versuche mit raketenbetriebenen Fahrzeugen und Flugzeugen, die der medienbewusste Fritz von Opel geschickt organisiert." HRonline.de, *Fritz von Opel/nachrichten/hr*.

[110] *New York Times*, December 24, 1929.

[111] Cliff R. Towner to Geoffrey N. Stein, November 22, 1994.

[112] Daniel D. Hungerford to Keith Marvin, April 7 (continued on April 28), 1964.

[113] Quoted by Marvin, "The Wizards of West Second Street".

[114] Marvin, "Misguided Missile".

[115] Daniel D. Hungerford to Keith Marvin, June 1, 1964.

[116] In 1994, the Glenn H. Curtiss Museum at Hammondsport learned of a motion picture film showing the rocket car in operation. A check with the Curtiss Museum in late summer of 2008 revealed that no such movie was at hand.

[117] Marvin, "The Wizards of West Second Street", manuscript version, p. 21. It is probably Osman shown standing with Hungerford in a photograph taken with the car that day. Marvin reports the day's events were photographed, "showing the car both standing and in motion."

[118] The clip identifies the co-driver as Charles J. Oswald of 532 Decker Avenue. However, a check of city directories shows that address to be the Osman family residence. Charles A. Osman is listed in the 1934 directory as a carpenter residing with, apparently, his parents at that address.

[119] Cliff R. Towner to Geoffrey N. Stein, November 22, 1994.

[120] July 31, 1958 ("Tuesday [July 29, 1958] marked the 24th anniversary of an event at Roulette which is perhaps even more significant today that it was in 1934."). A hand-written inscription on the clip reads, "With our Compliments Daniel D. & Floyd S. Hungerford 11-11-1958".

[121] *Elmira Star-Gazette*, July 2, 1935.

[122] Unidentified clip apparently from an Elmira newspaper in 1936, this based on other data in the story, specifically references to Chemung County and Harry W. Laidler's candidacy for governor.

[123] Noted and illustrated in *Special Interest Autos*, no. 146, March/April 1995.

[124] Shirley H. Hyde to Geoffrey Stein, September 9, 1992. In another letter, November 2, 1992, Hyde noted that her "husband's brother patented a gun-type soldering iron in the early 1940's." Note references elsewhere in this paper to the Hungerford's rocket-powered soldering iron.

[125] According to the 1935 directory, the Hyde family resided at 1164 West First Street while the Jennie L. Hopkins and the two Hungerford women were at 1160 West First Street.

[126] According to a Southside High School class of 1947 website, Towner was a member of that class.

[127] Cliff R. Towner, to Geoffrey N. Stein, November 22, 1994.

[128] Towner to Stein, November 22, 1994.

[129] McCann to Stein, July 19 1994. McCann said her father, who died in 1935, worked for engine manufacturer Henry Kleckler in Bath prior to working for Curtiss. McCann's mother's brother, Harry Genung, also worked for Curtiss as chief financial officer.

[130] A letter from Daniel Hungerford on August 26, 1966, refers to "Ed & Helen". The current author suggests the recipients were Erwin D. French and Helen E. Heckman French, who had married after the deaths of their first spouses. Erwin and Helen French in the 1950's lived in Horseheads. Later the two moved to eastern Massachusetts, where she had been married and lived with her first husband. Additional discussion of the Hungerford letter is noted in other areas of this book.

[131] George Mapes in telephone conversations with Geoffrey Stein, July 23 and 24, 2008. Stein's notes were revised on August 5, 2008, after Mapes reviewed Stein's initial record. While Mapes said he had the rocket car for his second, 1947–1948, year at Champlain College, a photograph he supplied of him with the car at the college is marked "April 3, 1947".

[132] Robert M. Boyles, *Before I Forget* (unpublished (?) autobiography), no page numbers.

[133] Robert Boyles via telephone to Geoffrey Stein, July 31, 2008.

[134] Quoted in the Page column published on September 4, 1994.

[135] Shirley H. Hyde to Geoffrey Stein, September 9, 1992.

[136] Igor Spajic, "1929 Hungerford Rocket Car Part 2", *Restored Cars* , Number 140, May-June 2000, p. 14

[137] Daniel D. Hungerford to Keith Marvin, June 8, 1964. Farrell's letter to Hungerford was written from Kenmore on February 11, 1942. Hungerford also wrote on the Farrell letter "At present Some where in the west[?]".

[138] Undated (probably 1964) Hungerford notes on an undated manuscript rejection letter from *Liberty Weekly*. Hungerford further noted "Material referred to above was written and forwarded to Liberty Magazine by Joseph R. Farrell, Jr."

[139] Thomas E. Byrne, *Chemung County 1890-1975* (Elmira, 1976), p. 73.

[140] Daniel D. Hungerford to Keith Marvin, May 28, 1964.

Chapter Five

POLITICS

For a man who spent most of his life self-employed and for a while was even a corporate president, Daniel Hungerford surprises in his candidacies for public office. It appears his family for many years, including his mother and brothers, were socialists. Perhaps Hungerford's experience as a machinist employed by others, albeit for a brief time, was a factor in his thinking. Perhaps important were his associations with skilled workmen employed by the large factories in the Elmira area (Willys-Morrow, Eclipse Machine Company and American Sales Book are examples) were influential. Still one wonders why a figure, as inventive as he was and as independent of many societal influences and norms, identified himself as a socialist.

Hungerford, his brothers and his mother were involved with Socialist Party events. In 1913, for example, the local organization "gave a delightful dancing reception last Monday" (December 29) including "charming music." Among the committee of arrangements were Daniel Hungerford and his mother. "The members of Elmira local intend to hold other dancing parties during the winter."[141]

Daniel and Floyd Hungerford often were candidates for office; Marvin said their earliest elections date from 1908. In 1913, Floyd may have been a candidate, perhaps for alderman or supervisor, while "David D. Hungerford"[sic.] ran as Socialist candidate for district attorney;[142] Daniel Hungerford gathered 158 votes, but the Republican ("Fusion") winner had 7,707 votes.[143] In 1915, Daniel Hungerford was the Socialist candidate for the third ward alderman; $1 was collected from Hungerford by the Socialist Party's county committee.[144]

In 1924 and 1926 Daniel Hungerford was the Socialist Party candidate for the 37th congressional district seat. In both instances, the Republican Party incumbent, Gale H. Stalker, won handily over his Democratic Party opponent with Hungerford running a distant third in the voting (1924: Stalker, 59,498; Charles L. Durham, 27,763; Hungerford, 1,720. 1926: Stalker, 46,757; Edwin S. Underhill, 32,618; Hungerford, 933). In 1930, Hungerford was the Socialist party candidate for the Assembly polling 364 votes against 13,574 for Republican G. Archie Turner and 10,384 for Democrat John B. McCann.[145] Still such overwhelming defeats didn't seem to discourage Hungerford. Marvin noted that Hungerford acknowledged he could not be elected as a Socialist in the Southern Tier. "Dan knew this but, as he explained to me, he had a lot of fun running!"[146] Hungerford himself wrote,

> Im [sic] a Gene Debs – socialists—, first last and all the time—. During the past fifty plus years Iv'e [sic] probly [sic] been a candidate for public office more times than Norman Thomas and William Jennings Bryan – put together—, and never for the sake of the office. . . .I never was or wanted to be elected to office—. It gave me prestage [sic] to throw monkey [sic] wrenches in to the politicians [sic] camps—.[147]

On November 3, 1932, the *Elmira Advertiser* reported that Daniel Hungerford and his brother Floyd were going to drive their rocket car to Syracuse that day to "aid in the campaign for Norman Thomas, Socialist candidate for president and at the same time inaugurate a drive to raise $1,000,000 for the promotion of rocketry in this country." Upon his return to Elmira, Hungerford planned to "canvas [sic] the county in the interest of his candidacy for sheriff."[148]

As chairman of the Chemung County Socialist Party, Daniel Hungerford and William C. Perry, a "local party organizer", issued a statement after the election.

> The Democratic party has virtually been placed in the position of ushering in the great Cooperative Commonwealth (of Socialism) and that it must be. . . . Thanks is hereby extended to the many friends and Comrades who assisted in getting out the Socialist vote. . . . The people are now giving the Democrats a shot at straightening things out…. Unless the Democrats now produce results, the electorate will rise up again and dethrone the party just as easily and effectively as it put the party in power Tuesday. . . . The national vote polled Tuesday by the Socialist party serves as a reminder to the Democrats that they must produce. . . . The Socialist party headquarters at 316 East Water

Daniel and Floyd Hungerford: Rocket Power, Interstellar Travel and Eternal Life, by Geoffrey N. Stein. New York State Museum Record 4, © 2013 by The University of the State of New York, The State Education Department, Albany, New York. All rights reserved.

> Street will be perpetuated, it was announced. Study classes in the principles of the party are to be begun. If we polled two million votes Tuesday, we will be more than satisfied. A party that can poll that many votes constitutes a force which cannot be ignored.[149]

A week later, Daniel Hungerford and E. Marshall Bush, of the "resolutions committee" of the Socialist Party, planned to present a petition to the Common Council, asking the city to take over the distribution of milk "to its citizens". Noting that farmers received five cents a quart while consumers paid ten, the petition asked the city to pay farmers "a fair profit" while selling milk "at purchase price plus cost of distribution, either as a monopoly or in competition with present distributors."[150]

At a meeting of party members in 1934, Daniel Hungerford as county chairman of the Socialist Party was designated as candidate for the post of county welfare commissioner.

Ever ambitious and optimistic yet cognizant of the specter of left-wing violence, Hungerford, quoted in the *Elmira Advertiser* as the 1935 election approached, said as "Socialist Party County chairman", the successful Socialists would retain city manager Florence J. Sullivan because he had operated "in an honest and efficient manner." Hungerford added that the party would be pleased to see unemployed Elmirans get jobs "even if they have to be in a privately-owned factory."

> In criticizing the plan of bringing a new industry here we have merely tried to point out the insecurities of private profit system, the dangers involved therein to organized labor and the vicious circle of competitive capitalism.
>
> My policy of leadership of the Socialist Party in Elmira for the past 25 years has been such as to direct progressive thought and energy along constructive channels. In keeping with this policy the Socialist Party has been successful in keeping the radical vote within its ranks, thus making it unnecessary for the formation of political groups in this vicinity that espouse violence and dictatorship.[151]

In 1936, despite having been reelected county chairman, Daniel Hungerford was reported to have abandoned the Socialist Party in the face of a split in the organization between an Old Guard and followers of Norman Thomas. Hungerford reportedly "stood for reconciliation". He declined an invitation to join the Republican Party, adding that to "go along with the new Socialist Party would involve more time than I can give. I feel that I can accomplish more in the mechanical field than in the political field."[152]

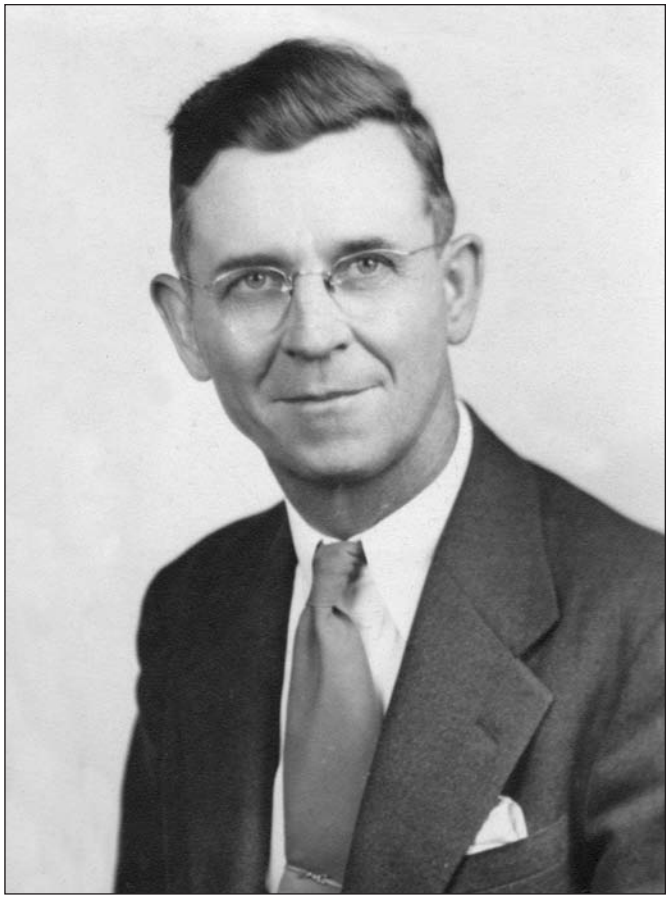


Figure 18. This Daniel Hungerford's photograph ca. 1945 was used when he ran for Assembly in 1948.

Although Marvin noted three Hungerford brothers continued "avid and active work on behalf of the Socialist Party", in the mid-1930s Daniel Hungerford left the old organization. William meanwhile ran for Assembly on the Socialist Party ticket in 1937 receiving 186 votes with Lewis E. Mosher, the American Labor candidate, getting 49 votes. For 1938, the Assembly votes from Chemung County reversed popularity as William Hungerford received 107 votes and American Labor candidate Harry B. Martin 971 votes.[153]

In spite of his promise to focus on inventions, a decade later politics was on Hungerford's mind, and in 1948 he ran for the state assembly on the American Labor Party ticket. His handbill noted he believed "that the benefits of inventions as well as of all labor should belong to the people, not the monopolists and will continue to work toward this end in Albany."

On November 7, 1948 just after the election, Hungerford wrote in response to a *New York Times* editorial ("Perspectives on the Election") a six-page letter in pencil to the editors. Principally, Hungerford pointed

Figure 19. Floyd Hungerford was photographed about the same date as Daniel, about 1945.

to the significance of minor political parties. He praised Henry Wallace, presidential candidate for the American Labor Party, for warning the public about "the rapid drift toward world war three." Minor parties, he continued, provide a public service "by presenting issues that otherwise would go by the board." Then, Hungerford concluded his piece by moving his thought to other worlds.

> . . . our great destiny does not consist in just quarreling over economics and national boundries [sic] in this world – but, involves the conquest of Space – occupation of the stars – and the attainment of Eternal Life on this Side of the grave-. Since that is true - Lets hasten our Progress – by ridding ourselves of all - Lost motion and most effort-. Let all the able bodied - do His and Her share of the usefull [sic] labor – but, before any has anything lets provide abundantly for the Incapacitated – what ever the cause -. Had Ponc Delion [sic] -,x Explorer of the Rivers of Florida – for the fountain of youth, but know[n] that latent within himself resided the very Element Essential to the Ends he sought-, He might find him self reading this letter in an early issue of the New York Times.[154]

In 1939, developers for a shopping site planned to demolish the Jervis Langdon family mansion, perhaps known best as the nineteenth century home of Olivia Langdon, who married Samuel Clemens (Mark Twain). As Jervis Langdon was selling the property, the city discussed acquiring the house as a museum. But in the end, the city council declined to buy the property for its assessment valuation.[155]

The *Elmira Advertiser* reported that demolition began on November 6, after the Langdon house was open to the public that morning from ten to twelve o'clock. On November 8 Hungerford and Marshall Bush on the scene carried signs for "Elmira Must Save Mark Twain Home. This Property Must Not Be Destroyed." Hungerford announced that he planned to park the rocket car "under the traffic signal at Main and Church Sts. unless workmen engaged on the building laid down their tools." He also said he had sent via telegram to the national announcer Lowell Thomas an "appeal . . . . over a national radio hookup for preservation of the property."

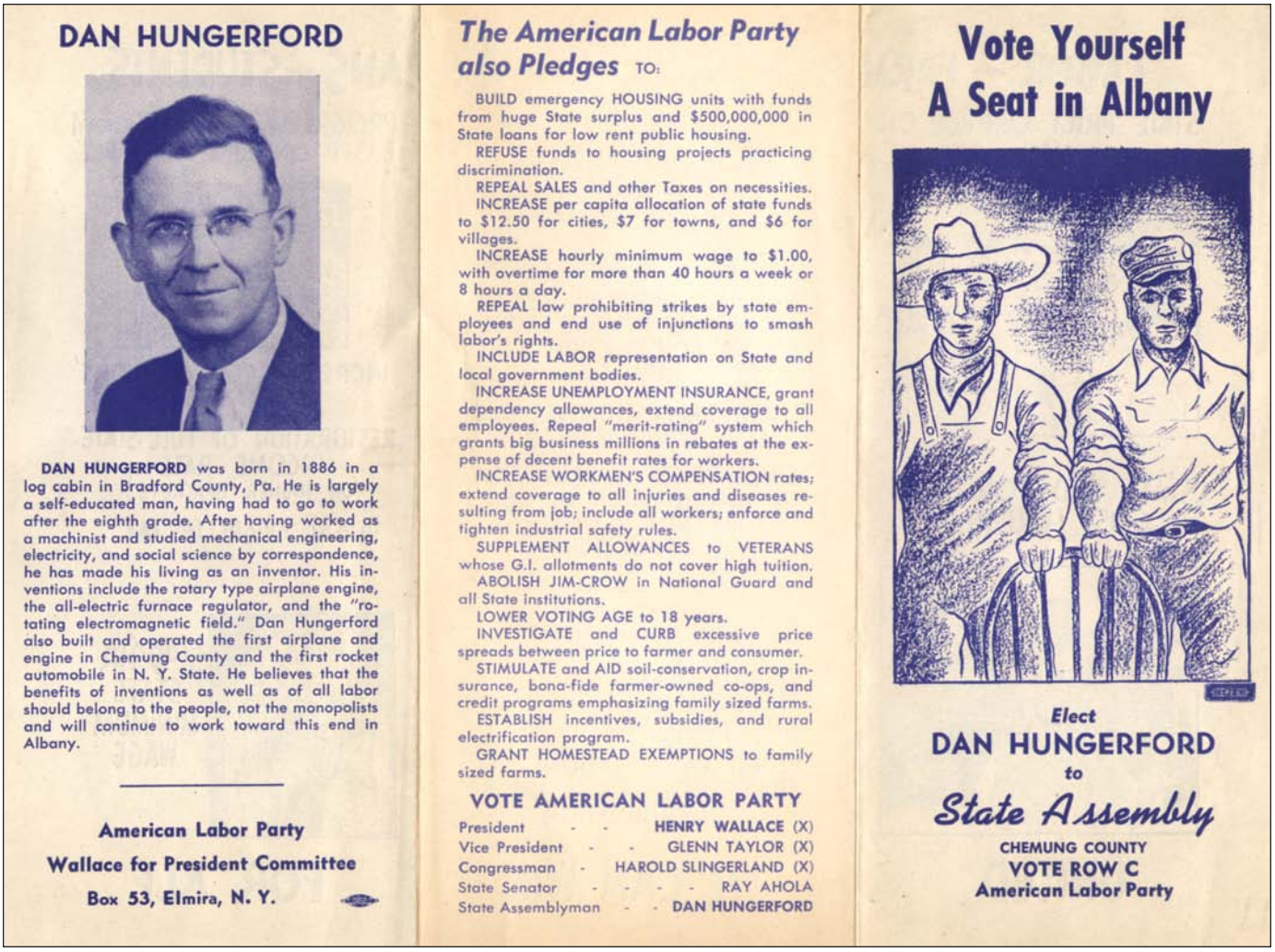
In response to Hungerford, Langdon said,

> At no time has the Langdon family thought it possible that the residence might be preserved as a municipal memorial. Such a course did not seem practical I regret very much that any measures have been taken to picket the property.[156]

The next day, November 9, Hungerford said, "Uppermost in our minds is the preservation of the building for the future." He added that he thought passersby "appeared deeply interested in the effort of halt demolition of the historic building. Experts have said that if the work can be halted before it proceeds further, a temporary roof can be applied without heavy expense."

Meanwhile one man had sold several "large doors to preserve them." He said he thought most items could be returned. Meanwhile, the demolition contractor, William Pedrick, said "picketing had reduced sales of material from the home."[157]

There were three picketers now, Hungerford, Bush and Erwin D. French, identified, in the 1970s, as "leaders of the Socialist Party in Elmira."[158] Hungerford said he had spent "greater parts of the morning discussing the proposition with Elmira businessmen but had not obtained an acceptable plan." The picketing would continue.[159]



DAN HUNGERFORD

DAN HUNGERFORD was born in 1886 in a log cabin in Bradford County, Pa. He is largely a self-educated man, having had to go to work after the eighth grade. After having worked as a machinist and studied mechanical engineering, electricity, and social science by correspondence, he has made his living as an inventor. His inventions include the rotary type airplane engine, the all-electric furnace regulator, and the "rotating electromagnetic field." Dan Hungerford also built and operated the first airplane and engine in Chemung County and the first rocket automobile in N. Y. State. He believes that the benefits of inventions as well as of all labor should belong to the people, not the monopolists and will continue to work toward this end in Albany.

American Labor Party
Wallace for President Committee
Box 53, Elmira, N. Y.

The American Labor Party also Pledges TO:

BUILD emergency HOUSING units with funds from huge State surplus and $500,000,000 in State loans for low rent public housing.
REFUSE funds to housing projects practicing discrimination.
REPEAL SALES and other Taxes on necessities.
INCREASE per capita allocation of state funds to $12.50 for cities, $7 for towns, and $6 for villages.
INCREASE hourly minimum wage to $1.00, with overtime for more than 40 hours a week or 8 hours a day.
REPEAL law prohibiting strikes by state employees and end use of injunctions to smash labor's rights.
INCLUDE LABOR representation on State and local government bodies.
INCREASE UNEMPLOYMENT INSURANCE, grant dependency allowances, extend coverage to all employees. Repeal "merit-rating" system which grants big business millions in rebates at the expense of decent benefit rates for workers.
INCREASE WORKMEN'S COMPENSATION rates; extend coverage to all injuries and diseases resulting from job; include all workers; enforce and tighten industrial safety rules.
SUPPLEMENT ALLOWANCES to VETERANS whose G.I. allotments do not cover high tuition.
ABOLISH JIM-CROW in National Guard and all State institutions.
LOWER VOTING AGE to 18 years.
INVESTIGATE and CURB excessive price spreads between price to farmer and consumer.
STIMULATE and AID soil-conservation, crop insurance, bona-fide farmer-owned co-ops, and credit programs emphasizing family sized farms.
ESTABLISH incentives, subsidies, and rural electrification program.
GRANT HOMESTEAD EXEMPTIONS to family sized farms.

VOTE AMERICAN LABOR PARTY

President - - HENRY WALLACE (X)
Vice President - - GLENN TAYLOR (X)
Congressman - HAROLD SLINGERLAND (X)
State Senator - - - - RAY AHOLA
State Assemblyman - - DAN HUNGERFORD

Vote Yourself A Seat in Albany

Elect
DAN HUNGERFORD
to
State Assembly
CHEMUNG COUNTY
VOTE ROW C
American Labor Party

Figures 20 A-B. (A page 36 and B page 37). After twenty years of running for offices, Daniel Hungerford hoped to be an American Labor Party Assemblyman. Hungerford's plans for New York included a price control on milk, aid for housing, free university and other state paid schools, progressive income taxes, repeal of the cigarette tax, and a minimum $1 hour wage.

But in November 10, its purpose changed "to develop public sentiment in favor of devoting the property to memorial rather than commercial use." A committee was to be organized to receive money "on a national scale". Hungerford and Bush said they had not convinced the public to preserve the house; "there was strong sentiment for erecting a shrine on the property." A Hungerford letter to the editor of the *Star-Gazette* on November 13, said that the "Mark Twin center" would provide the city as nationally known as was the "national gliding center." Elmira would lose a "hundred thousand dollars" for tourist visitors if the shrine did not appear. Hungerford said actually the Langdon property had not been sold as one thought so that the construction of fifteen stores was not certain. Hungerford also added that Bush and he "found ourselves looking into a commercial movie camera. The old building was also movied [sic]."[160]

On November 10, 1939, the *Advertiser* said "souvenir hunters, mostly" had taken Langdon material. The contractor, William Pedrick, stated the "odd items" had no estimated value. But a few years later Hungerford said he had saved the important, historic newel post from the Langdon house. Hungerford said Mark Twain asking for Olivia Langdon's marriage had his hand on the post and Olivia's on top of his.[161]

In 1992 Shirley Hungerford Hyde remembered that her father fought a campaign to save the Langdon house. She wrote that friends from Elmira agreed it was a "crime to have lost a beautiful, historical landmark in order to erect a tiny two-bit plaza. Dan was a prime example of a man TRULY born way ahead of the

times.[162] In 2000, Thomas J. Carpenter related "the Hungerford Brothers picketed the site in opposition to destroying the Mansion. They did not succeed but they were way a head of their time [in terms of historic preservation]."[163]

In the 1950s, Daniel Hungerford proposed a local museum project as he turned again to the preservation of local history. A supporter identified only by "Museum-Minded" in a letter to the editor of the *Star-Gazette* in November 1957 praised Hungerford's suggestion since "Relics now old will soon pass out of existence if not preserved now."

> Dan Hungerford has been accused of being a theorist. His theories of the past are realities of today. Was it not Dan who was talking 30 years ago about the possibilities of space travel? Didn't he pioneer in aviation and built the first airport in Chemung County? Didn't he build the first rocket automobile ever licensed in the United States? The same vision lies behind his effort to establish a museum in Chemung County.[164]

In 1967, Hungerford hoped to save the West Second Street house from which he had been evicted. The effort to demolish the house was, he said, "THE REASON FOR ALL this destruction – THE LOCAL POLITICIANS ARE TRYING TO GET FOURTEEN—MILLION [sic] DOLLARS FROM THE FEDERAL GOVERNMENT –FOR URBAN RENEWAL—." Hungerford continued to say the plan was to demolish all the structures on the south side of Water Street in the central district of the city. But he remembered,

> IN 1956 WE [One assumes he meant Floyd and Daniel] DREW PLANS OF SUCH A PROJECT AND SUMITED [sic] A COPY TO GLENN BAN-

> FIELD – GLEN [sic] WAS CITY MANAGER – at the time – OUR PLAN WAS TO BUY THE LOTS – AS RAPIDLY AS THEY BECAME AVAILABLE—FOR ANY REASON –TOM LIKED OUR PLAN AND REMARKED—WE HAD DONE A LOT OF WORK—DRAWING UP THE PLAN AND NOT AT ANY COST TO THE CITY—THE CITY IS HIRING A MAN FROM ITHICA [sic] AT SEVERAL THOUSAND TO DRAW THE PLANS—NOW—OF SUCH IS OUR ADMINISTRATION—THERE WAS NO CHACE [sic] FOR KICK BACK IN OUR PLAN—OUR COUNCIL MEN HAVE THEIR HAND OUT FOG GRAFT AT EVERY TURN—.[165]

Still in the early 1960s, Daniel Hungerford thought the benefits of socialism were obvious. Contemplating the closing of the Chemung County [poor] Home at Breeseport, he wrote to the editor of the *Star-Gazette* that the county board of supervisors had better have invested in the facility "maintaining it in a world that is turning so rapidly to socialism." A sales tax would not have been needed "if our people and public officials had set up a first class wholesale and retail business. The profit could have gone to defray the cost of government and we could have abolished all taxes."[166]

And in November 1966 Hungerford wrote, "The capitalist system, [sic] is about 800 years old and coming to an end with terrible violence. . . . You cant [sic] make capitalism work without war or preparation for war. Since World War Two our government has spent just under one trillion dollars for war." But then he moved to other interests.

> We are in the space age. Every living thing on this earth will be involved in this great task. You will no longer teach your children, that three score and ten stuff. You will teach them, to, achieve [sic], a life span of thousands of years. Even millions. So great will be mans [sic] ventures in to space. Had Ponce Deleon, explorer of the rivers of Florida, but known, that latent with in him self were the very elements, essential to the very ends he sought, might very well be reading this letter to day.
> Very Sincerely
> Daniel D and Floyd S. Hungerford[167]

In 1966, Daniel Hungerford promoted the candidacy of George Romney, governor of Michigan, for the presidency in the election of 1968. Why Hungerford thought Romney, a Republican, would fit into a socialist mold remains a mystery here. In any case, Romney in December 1966 wrote that if he were to run, he would contact Hungerford "concerning your participation."[168] That note elicited a three-page Hungerford letter disparaging capitalism and war. He urged Romney to run for president as an independent and promised to "campaign on your behalf, until [sic], as my mother used to say, the last dog is hung."[169] In a letter January 5, 1967, Hungerford indicated that it was Romney's success as the head of American Motors that prompted Hungerford's interest. He would have wanted Romney to run as an independent endorsed by Republicans and Democrats. With efficient operation of "our great industrial system" society would have "all we could possibly use."

For some reason, Hungerford associated a Romney candidacy with a means to reoccupying the Hungerford house from which he had been evicted for non-payment of property taxes. In his letter to Robert John McIntosh, a lawyer in Port Huron, Michigan, Hungerford wrote of his eviction ending with "I know eternal God is on my side – and will avenge the acts of the local politicians. . . . Unless we can elect – George Romney – Pres. In 1968 – We better not nominate him—." In another letter Hungerford wrote, "We will organize – a Romney – for President – club as soon as we have the go ahead—-."[170]

ENDNOTES

141 *The Telegram*, January 4, 1914. "A feature of the evening was the 'moonlight' dances in which varicolored calcium lights were thrown on the dancers….The programs were dainty affairs of red, gold and white, with the Socialist party emblem on the cover."

142 *The Telegram,* November 16, 1913. The city directories 1912 and 1914 have no listings for "David D. Hungerford".

143 *Elmira Star-Gazette*, November 5, 1913. The Democrat had 6,762 votes. Candidates for other parties received much smaller votes.

144 *The Telegram*, November 14, 1915.

145 New York State *Red Book* for 1931. Keith Marvin in his manuscript for "The Wizards of West Second Street", p. 3, said all three Hungerford brothers "ran regularly on that ticket for county office – state senate, assemblyman, sheriff and others, and had done so as early as 1908."

146 Keith Marvin to Geoffrey Stein, April 24, 2004.

147 Daniel D. Hungerford to Robert John McIntosh, January 5, 1967.

148 The *Elmira Advertiser* for August 17, 1932 reported the Socialist slate of candidates for the November election. Other Socialists running for office included E. Marshall Bush for assembly and Israel S. Putnam for county clerk. For county offices, the number of required signatures on the nominating petitions for county office was two for the Socialist and Law Preservation parties. For Republicans, 292 signatures were needed. For Democrats, 500.

[149] *Elmira Advertiser*, November 10, 1932.

[150] *Elmira Advertiser*, November 19, 1932.

[151] October 31, 1935.

[152] Unidentified clip from a pre-election 1936 Elmira newspaper.

[153] Hutchins, Mason C., editor, *The New York Red Book 1938* and *1939* (Albany: J. B. Lyon Company, 1938 and 1939).

[154] L. P. Huger, Letters Editor, responded to Hungerford on November 11, 1948, that the newspaper editors "appreciate the courtesy and interest that prompted you to send us the enclosed contribution, but regret our inability to make use of it."

[155] *Chemung County 1890-1975*, pp. 86-87.

[156] *Star-Gazette*, November 8, 1939.

[157] *Elmira Advertiser*, November 9, 1939.

[158] *Chemung County*, p. 87.

[159] *Star-Gazette*, November 9, 1939.

[160] *Star-Gazette*, November 13, 1939.

[161] George Mapes telephone to Geoffrey Stein, September 19, 2009.

[162] Shirley H. Hyde to Geoffrey Stein, September 9 1992.

[163] T. J. Carpenter to Igor Spajic, May 16, 2000. Samuel Clemens (Mark Twain) married Olivia Langdon in the house.

[164] Newspaper clip dated November 18, 1957. The author suggests the writer was Erwin D. French, who elsewhere praised Daniel Hungerford's accomplishments.

[165] Daniel D. Hungerford (signed "Daniel D. & Floyd S. Hungerford by D.D.H.") to Steve Sekella, January 12, 1967. The buildings at the south side of East Water Street were demolished following the flood of 1972.

[166] Undated clip. Hungerford's reference to "122 years of service" would suggest 1958 or 1959 for the date of the letter. Byrne, *Chemung County 1890–1975*, gives both 1836 (p. 210) and 1837 (p.434) as founding dates for the facility. The poor farm there closed in 1960 with the county infirmary moving to Elmira in 1971.

[167] Daniel D. Hungerford to Klaus Feuchtwanger, November 2, 1966. The contents of this letter parallel the text of "Our Philosophy of Life" a document dated May 23, 1962 in Hungerford's hand. A copy was made available to the author by Linda Lathrop, Hungerford's great-niece.

[168] George Romney to Daniel D. Hungerford, December 3, 1966.

[169] Daniel D. Hungerford to George Romney, December 12, 1966. In a postscript, Hungerford added, "In the event, Gov. Romney, you go over seas, please, be carefull. [sic] D."

[170] One letter is dated January 5, 1967. The other survives copied and incomplete in Hungerford's hand. Both letters are signed "Daniel D. & Floyd D. Hungerford by D. D. H." as was Hungerford's custom after his brother's death. More about the eviction history follows later in this work.

Chapter Six

HUNGERFORD INVENTIONS

Over more than a half century, Daniel and Floyd Hungerford imagined and developed a variety of inventions. While this book elsewhere mentions important Hungerford products, e.g. aircraft engines and the rocket car, this section identifies additional projects. Some Hungerford work was only incomplete, elusive sketches. Other inventions, including some that were patented, came closer to production.

TWO-CYLINDER OPPOSED AIRCRAFT ENGINE

Dated 1909–1910, a two-cylinder, thirty-horsepower engine combined air and water cooling using fins and copper water jackets. The layout was similar to the Detroit Aero Engine, an air-cooled device used in light aircraft of the 1910 period. Additional description appeared in part earlier in chapter two of this book. The engine survives in the collection of the Glenn H. Curtiss Museum in Hammondsport.

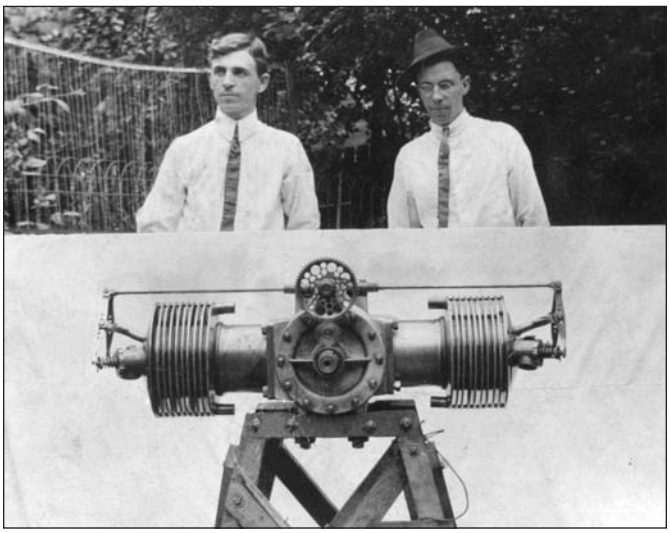


Figure 21. Daniel and Floyd Hungerford, left to right, posed with the two-cylinder aircraft engine designed and built by them in 1909.

AUTOMATIC STOP AND REVERSE MECHANISM A.K.A. FURNACE REGULATOR

A handbill promoting Daniel Hungerford for assembly in the election of 1948 included the information that among Hungerford's inventions was "the all-electric furnace regulator". The 1910 patent granted to Hungerford for the automatic stop and reverse mechanism suitable for use in a thermostat was described above in chapter one. The rights to the patent were assigned to Hungerford's employer, the American Thermostat Company.

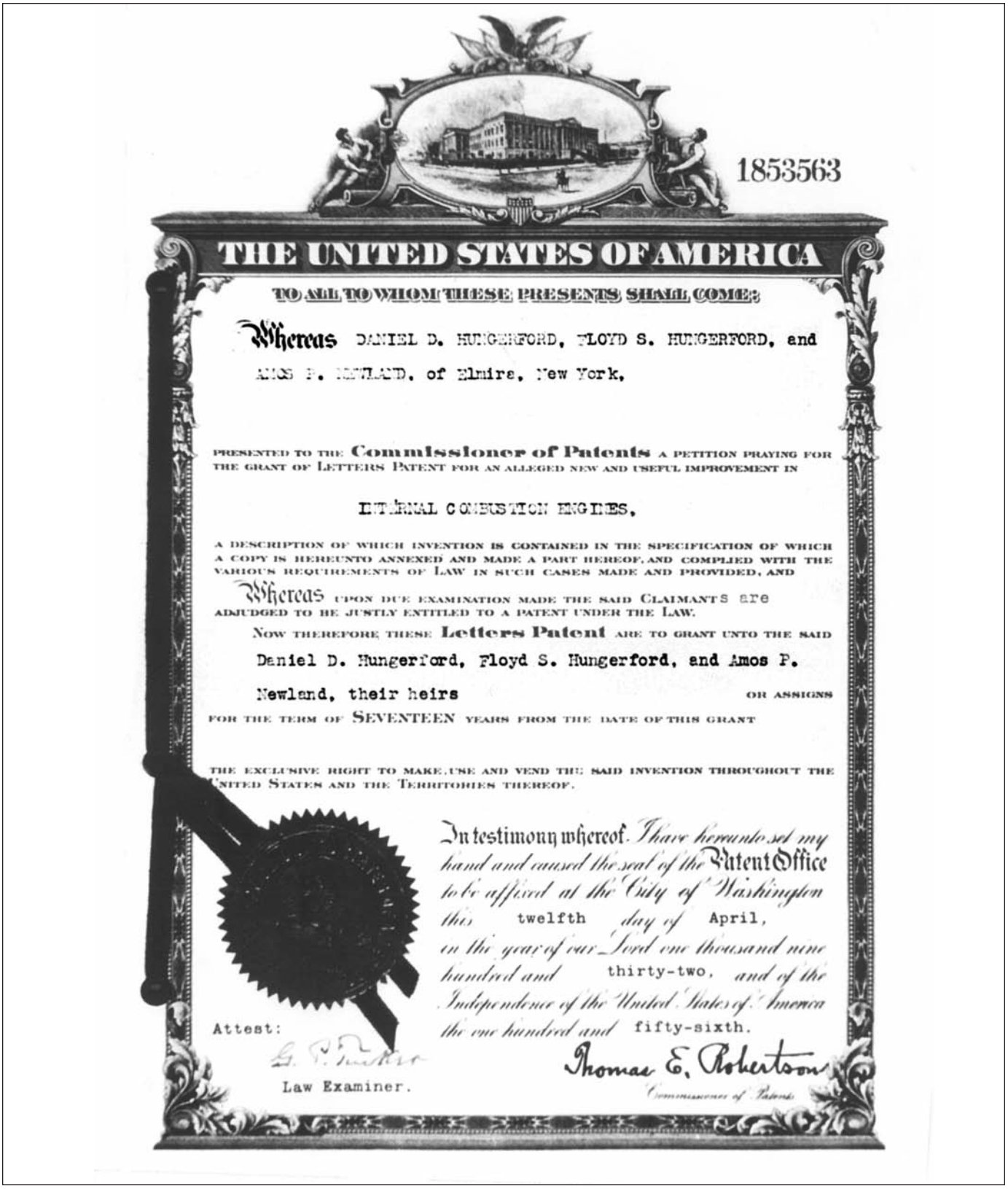
ROTARY AIRCRAFT ENGINE

Working with Amos P. Newlands, the Hungerfords, in 1928, applied and received a patent in 1932 for the valve fitted to the hub for a five-cylinder, two-stroke engine (cylinders each firing during one revolution). Curtiss Museum curator Merrill Stickler noted in 1979 that there were two Hungerford "cased rotary engines of unusual design" in the Museum's collection.[171] One example is the five-cylinder engine, while the second is a smaller, four-cylinder machine. Photographs from the Hungerfords show both free-standing engines operating. The author does not know if either engine ever was installed in an airplane.

Newlands (1875–1973) appears in the 1906, 1938 and 1949 Elmira city directories as a painter. In 1912, he was an engineer at the Hotel Rathbun. And from 1914 until 1933, he worked as a chauffeur for the Copeland family in Elmira.[172] Newlands was identified (1940) as a carpenter residing with his wife Millie on West First Street a few blocks from the Hungerfords. His work as a chauffeur and, if independently employed as a painter or carpenter, likely left him time to visit and consult with the Hungerford brothers. What education he had beyond the ability to read and write reported in the 1920 census is unknown here.

Schuyler Lathers related that Daniel Hungerford received $10,000 from the federal government during World War One for an aircraft engine. With no

Daniel and Floyd Hungerford: Rocket Power, Interstellar Travel and Eternal Life, by Geoffrey N. Stein. New York State Museum Record 4, © 2013 by The University of the State of New York, The State Education Department, Albany, New York. All rights reserved.



1853563

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Whereas DANIEL D. HUNGERFORD, FLOYD S. HUNGERFORD, and AMOS P. NEWLAND, of Elmira, New York,

PRESENTED TO THE Commissioner of Patents A PETITION PRAYING FOR THE GRANT OF LETTERS PATENT FOR AN ALLEGED NEW AND USEFUL IMPROVEMENT IN

INTERNAL COMBUSTION ENGINES,

A DESCRIPTION OF WHICH INVENTION IS CONTAINED IN THE SPECIFICATION OF WHICH A COPY IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND COMPLIED WITH THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED, AND

Whereas UPON DUE EXAMINATION MADE THE SAID CLAIMANTS are ADJUDGED TO BE JUSTLY ENTITLED TO A PATENT UNDER THE LAW.

NOW THEREFORE THESE Letters Patent ARE TO GRANT UNTO THE SAID Daniel D. Hungerford, Floyd S. Hungerford, and Amos P. Newland, their heirs OR ASSIGNS FOR THE TERM OF SEVENTEEN YEARS FROM THE DATE OF THIS GRANT

THE EXCLUSIVE RIGHT TO MAKE, USE AND VEND THE SAID INVENTION THROUGHOUT THE UNITED STATES AND THE TERRITORIES THEREOF.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington this twelfth day of April, in the year of our Lord one thousand nine hundred and thirty-two, and of the Independence of the United States of America the one hundred and fifty-sixth.

Attest:

Law Examiner.

Thomas E. Robertson

Commissioner of Patents

Figure 22. A patent for Daniel and Floyd Hungerford and Amos P. Newland was granted on April 12, 1932. The rotary "internal combustion engines" invention patent application was filed more than four years previous, on February 8, 1928.

camshaft, no valves, and no connecting rods, the pistons were mounted directly on the crankshaft. Lathers said he saw a model of the engine in 1935 or 1936.[173] One wonders if Lathers after the passage of forty-five years might actually have seen a model of the rotary engine patented by the Hungerford brothers and Amos Newlands. Or, more likely, perhaps he saw the smaller, four-piston rotary which appears to be encased in a box, actually a frame.

Peg Gallagher said Lathers told her he remembered a science instructor and Hungerford discussing an "unusual aircraft engine that Daniel told him the federal government had given him $10,000 to develop." Lather recalled,

> He took me to his barn and he claimed to have collected one of every kind of aircraft engine in the world. And, in a box, you couldn't see much that looked like an engine, but supposedly it was one of their prototypes and he did tell me he got $10,000 from the federal government for it.

Lathers said he couldn't substantiate Hungerford's claims, which he says, "may have been inflated." Neither, however, can he dismiss them. He remembers Dan's description of the engine. "It was not a turbo type like your jet engines of today. But he claimed he could develop a flame – which was apparently true today – that was as hard as a bar of steel." Lathers said.

"I don't know…that's quite a statement. But on the other hand, a jet engine when it takes off is nothing more than a column of air which is under high compression. He was essentially doing the same thing with his little rocket."[174] One wonders if Lathers at the end was talking about Hungerford's "electro-magnetic space drive" mechanism described in chapter seven of this book.

In an excerpt from a conversation about Chemung County aviation history, someone named Crandall spoke of the Hungerford rotary engine.

> Crandall —- I remember, in his backyard, for a long time, I was called to take a picture of a new engine that he had created. He had reversed the old radial engine which had all the connecting rods meeting in the middle out of a central crankshaft and he had the pistons going outward. The entire outside of the engine was the crankcase. His idea was that the centrifugal force, when this thing turned around, would keep the oil in that area and the connecting rods instead of being flexible in connection with the pistons, were rigidly set, and at the ends, they had little rollers that climbed on an inclined plane at about seven different angles that went around in the middle of this crankcase. Do you remember that?
>
> Griswold —- No, but I know that he had a lot of ideas.
>
> Crandall—-Of course, it was an idea that didn't work because it was too doggone heavy.[175]

Patent attorney George L. Wheelock in 1942 wrote to Daniel Hungerford, Floyd Hungerford, and Amos Newlands asking if the men might wish to acquire their original letters patent, #1,853,563, since Wheeler was closing his office in Manhattan. Daniel Hungerford responded by sending postage stamps to Wheeler to mail the documents. Wheelock answered, "As you write to me that you may have some new work for me in the near future, I will send you my new address in California, if you wish to do business with me out there."[176] The writer knows of no further correspondence with Wheelock.

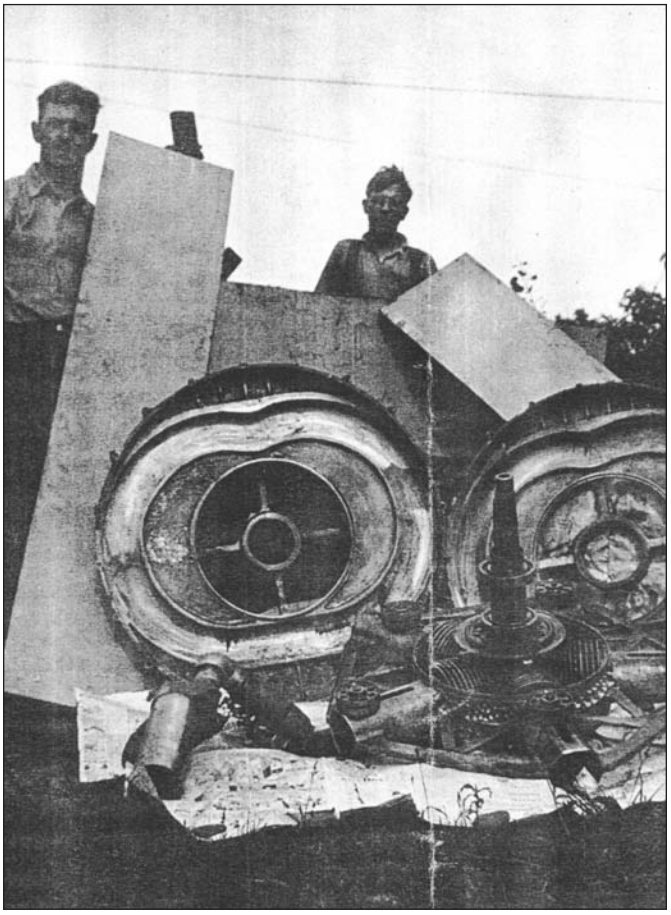


Figure 23. This photograph of a five-cylinder engine shows the Hungerfords posing with the parts before assembly.

In 1927, the Elmira *Sunday Telegram* stated that Daniel Hungerford, the "recognized authority in aerial matters", was familiar with the work of Charles S. Teasdale, who in Elmira in 1910 had built a glider and planned to add an engine. The "five cylinder rotating plan" was to weigh ninety pounds and develop sixteen horsepower.[177] Whether this plan related to the Hungerford-Newlands patent in 1932 is unknown.

Both engines at the Curtiss Museum were on exhibit in 2013. The larger, five-cylinder engine was shown taken apart so that visitors could see the mechanism.

ROCKET-POWERED SOLDERING IRON

Daniel Hungerford said he and his brother devised this item to speed aircraft construction work. Keith Marvin wrote it was the press of the aircraft repair business that induced the Hungerfords to develop their soldering iron.

The Hungerfords said the idea was that the iron with a blast of burned gas would push itself away from the soldered area. Marvin said gasoline was used for fuel in the iron and added,

> Low octane – air-spark plug principle. This they soon had, and after some experience they perfected it, Attached to an air hose, once activated, the hose and head gave a quick but firm jolt, not unlike the kickback of a rifle or shotgun. When asked why the head was used instead of the more conventional iron which wouldn't kick, Daniel explained: "In the repair business, particularly during the annual soaring contests, we had more than enough business and had to do perfect work. Much of this involved soldering, and after all, if you have a rocket iron which works four times or so faster than the regular type, it really does seem more practical."[178]

The iron was a gift from Marvin to the State Museum in 2005.

ROCKET-POWERED LAWN MOWER

Marvin wrote, "This, sad to relate, was never finished; it would have been more interesting to see how quickly grass and weeds might be cut by rocketry, or how much mayhem might have been created with hedges, bird baths and the like, had the machine 'gotten away.'"[179]

AUTOMOTIVE CHASSIS

Marvin donated to the New York State Museum a sheet of typing paper on which is marked by hand in pencil "D. D. & F. S. HUNGERFORD INVENTORS AXLESS-AUTIMOBILE MOUNT AND DRIVE." A second notation says "EXACT DATE OF CONCEPTION NOT AVAILABLE AT THE MOMENT MODEL OUT IN OUR SHOP SOME WHERE BUT IN LATE 20'S OR EARLY 1930'S".

The drawing on the page shows what appears to be a vehicle with four, independently-suspended wheels; in an era of solid axles at both ends of automobiles, the independently suspended wheels, indeed, were unusual. Taped to the drawing is a letter Daniel Hungerford sent to Keith Marvin on June 6, 1964.

> Dear Keith:
>
> Appended here to is an idea Floyd and I – puzzled over once for some time many years ago – and actually built some parts of a model – It is out in our shop -. It will be some task to locate the parts we did make - You will understand with one look into our shop. Such a mess.
>
> Full detail is now shown – obviously[.] Floyd was right – when he said one day – Dan we have enough planned to consume ten thousand years – building-. Keith – I'm amazed –at the amount of work you have done [on the 'Wizards' article].
>
> Most sincerely
> Dan
> D.D. & F.S. Hungerford

If the model to which Daniel Hungerford referred was a full, or near full scale, device, then it was attached to the fuselage of a Curtiss Oriole airplane which George Mapes remembers seeing in the Hungerford shop in the 1940s. He recalls the airplane covered with junk "ever since I knew him [Dan]". The fuselage had two wheels on it with a mechanism. "I really couldn't understand" for making them lean to change the center of gravity. The idea was to use such a system in automobiles for high speed cornering.[180] A photograph of the Oriole fuselage being transported to the Curtiss Museum in Hammondsport shows a portion of the left side of the fuselage with a balloon type automobile tire and wheel mounted under a fender. The fuselage subsequently was rebuilt, without the suspension device, as the part of a complete Oriole airplane on display at the Curtiss Museum.

AUTOMOTIVE BRAKE AND ACCELERATOR PEDAL

Robert Boyles has observed Daniel Hungerford was a genius who could do anything mechanically. Boyles, as a young man spending time at the Hungerford shop, saw many of Hungerford's inventions which did not pay off. For example, there was a device for taking a car out of gear when the driver's foot was applied to the brake pedal which Hungerford installed on a Terraplane car he owned.

A surviving, rough, pencil drawing showing a similar device is labeled "Combination Foot Brake and Acc. Pedal Invented by D. D. Hungerford Oct. 10-1962". The names of Guy W. Harder, a Hungerford neighbor, and Russell L. Barr, an inventor and Hungerford colleague, are attached to the sheet as "witnesses".[181]

A 1965 letter from Joseph Crupi, of the Ford Motor Company's engineering "New Devices" staff to Hungerford acknowledges receipt of a Hungerford letter concerning the combined brake and accelerator system. Crupi noted a number of "similar constructions" were proposed both by Ford employees and outsiders. He indicated that in the case of a "particularly novel construction" the Ford Company would consider it, preferring to deal with patented ideas as an indication of novelty with the "rights of the patentee . . . established."[182]

An undated newspaper clip notes:

> Only six years ago, Dan picked me up at my store and took me for a test ride in an old car wherein the accelerator and brake all worked on the SAME pedal. He'll never know until he reads this how scared I was that afternoon. As I recall, you pushed your foot part way down to feed the gas, and all the way down to apply the brakes. Gosh, I shiver at the thought of one-pedal cars downtown on Friday Nights, but then . . . Dan's invention was only in the blueprint stage at that time…and traffic was lighter.[183]

KEY EJECTOR

H. Steven Sekella recalls a Daniel Hungerford device to prevent a person from leaving a key in a lock. Primarily intended for house doors, the device was also applicable to automobile locks. A spring would eject the key if the user did not pull it from the lock. The experimental model Hungerford devised was "too powerful", throwing the key from the test lock across the Hungerford yard.[184]

VINE TYING TOOL

In an August 1966 letter, Daniel Hungerford noted that "loosing [sic] 823 [his house at 823 West Second Street] and loss of my arm has tied up work on the Vine Tiiing [sic] Tool." Then on November 7 [?], 1966, Hungerford wrote to Harry O. Bright, an attorney at Winston-Salem, North Carolina, to seek compensation of $2,000,000 for an injury working with the Elmira Water Board. This injury then led to

> My inability to complete a contract, to develope [sic] a tool for one of the wine companie's [sic] in Hammondsport, N.Y. Shortly be fore [sic] my injury, I was most fortunate the agreement was verbal and not bonded. I don't [sic] mean that I wanted to squirm out of the deal. Not at all. I was making good progress with the invention, until [sic] two and one half years ago. When I had a relapse of my condition, rendering my right arm almost completely, [sic] I could barely lift my crutch, much less handle tools. . . .
>
> Returning to my invention, for a moment, same when completed, and put on the market is worth, millions of dollars.[185]

Unfortunately, the author has no additional information about this device.

SNOW PLOW

In the fall of 1966 in an undated letter to Mayor Howard H. Kimball and the Elmira city council, Hungerford mentioned that he, and his late brother Floyd, had devised "an invention, to be attached, to road scraper and, [sic] snow plow blades." During the previous winter, he had sent "drawings, specifications, and, letter of terms, under which we would be willing to let Elmira, develope [sic] and use our invention". Hearing nothing from the city, Hungerford in his letter asked for the return of the material, enclosing "postage to cover cost of mailing."[186]

MOTORCYCLE

Robert Boyles remembers a motorcycle Hungerford "built from scratch". Boyles added, "I never saw the motorcycle in operation, but noted that it was chain driven."[187]

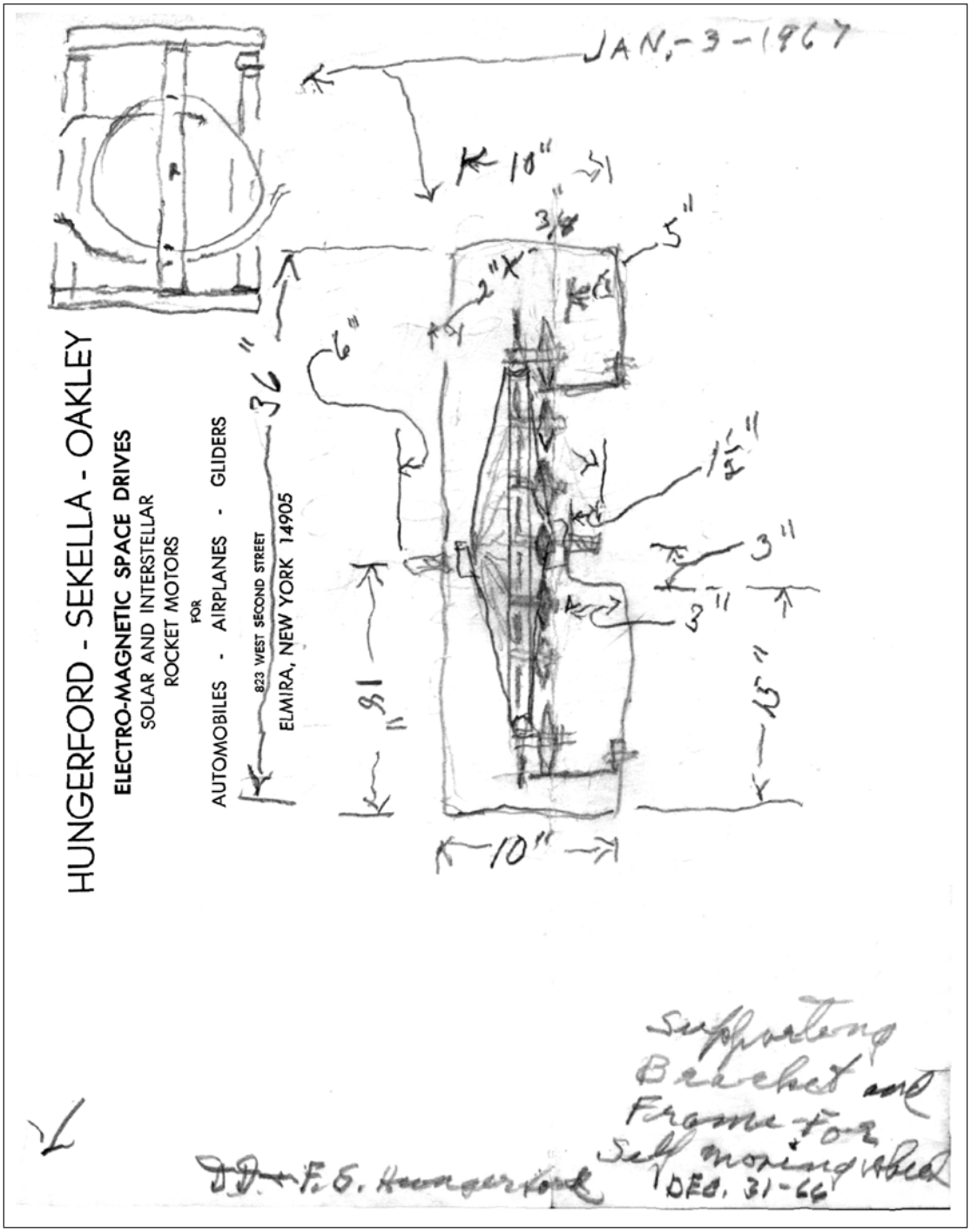


Figure 24. Daniel Hungerford proposed his "self-moving wheel" in the drawing dated January 3, 1967.

SELF-MOVING WHEEL

In January 1967, Hungerford wrote he was "working on a machine of a different [unlike the electro-magnetic space drive] – that may have a promice [sic] – some thing we (I) can do here in my little rooms—."[188] This likely was the "self-moving wheel" shown in Hungerford drawings dated December 26 and 31, 1966, as well as January 3, 1967. On the first drawing Hungerford noted,

> I just dreamed – sitting here – a man came in carrying – large – wheel –wire spokes – that extended beyond a sort of rim but not a rim-. The wheel was a good 3-feet in diam – and looked like this – The thing happened so quick I couldn't catch all the details. The hoop [?] looking at the edge looked like this. . . .

The drawings also are marked "SELF-MOVING WHEEL-. Our idea – not the wheel –with the spokes" and "Supporting bracket and Frame For Self Moving Wheel. . . D.D. & F. S. Hungerford".

Steven Sekella recalls a perpetual motion machine in the Hungerford apartment on East Third Street. This device resembled a Ferris wheel and used ball bearings. One wonders if that might have been the self-propelling wheel.[189]

CONCRETE DRILL

Drawings of a "Rock or Concrete drill" are identified as "DESIGNED -5-30-58 RUSSELL BARR. 531 CENTER STREET. ELMIRA". Although Barr's name appears on the images and captions and he was close with the Hungerfords, the drawings and lettering for the drill resemble Daniel Hungerford's work. One wonders if the Hungerfords recorded most of the invention.

ENDNOTES

[171] Stickler to Geoffrey N. Stein, March 30, 1979.

[172] I. Seymour Copeland was the owner of the *Evening Star*, one of the two newspapers which merged in 1907 to form the continuing *Star Gazette*.

[173] Lathers to Geoffrey Stein in conversation, August 9, 1979. No patents were issued to Daniel Hungerford between 1914 and 1922. In fact, the only patents granted to him at all apparently are for the automatic start and reverse mechanism described above and for the joint Daniel, Floyd Hungerford and Amos Newlands invention of the rotary engine.

[174] Peg Gallagher, "Moonstruck", *New York Alive*, March/April 1986, p. 52.

[175] Three pages of this conversation are preserved in photocopy form at the Glenn H. Curtiss Museum and at the Chemung County Historical Society among items collected in the early 2000s by research David Smith. "Crandall" possibly was G. Wells Crandall, a photographer.

[176] Wheelock to D. D. Hungerford, March 17, 1942 and March 23, 1942.

[177] September 11, 1927. The article is a "review of the history of airplane construction as it related to this city in particular".

[178] Marvin, "The Wizards of West Second Street".

[179] Marvin, "The Wizards of West Second Street".

[180] George Mapes in telephone conversation with Geoffrey Stein, July 23 and 24, 2008. If, indeed, the Oriole is the item in question, it actually had been transferred to the Glenn H. Curtiss Museum a few years prior to the time Hungerford wrote to Marvin. That fuselage since has been restored to original, Curtiss factory form in the recreation of a complete Oriole aircraft. If, on the other hand, Hungerford actually had a small-scale model in mind, that likely has been lost.

[181] A photocopy of the drawing was provided to the Glenn H. Curtiss Museum by researcher David Smith. The original may be in the hands of Linda Hungerford Lathrop, a granddaughter of Daniel's brother William.

[182] September 16, 1965.

[183] The writer's "at my store" suggests the column clothing store operator was Leon Markson who wrote regularly for the *Elmira Star-Gazette*.

[184] H. Steven Sekella to Geoffrey Stein via telephone, September 30, 2008.

[185] Daniel D. Hungerford to Harry O. Bright, November 7[?], 1966.

[186] Daniel D. Hungerford to Howard H. Kimball et al. The letter is signed "Daniel D. & Floyd S. Hungerford by DDH"

[187] Robert Boyles in telephone conversation with Geoffrey Stein, July 31, 2008; Boyles to Stein via letter, October 25, 2008.

Chapter Seven

TO THE STARS BY "ELECTRO-MAGNETIC SPACE DRIVE"

The *Elmira Advertiser* for July 11, 1932, reported that Daniel Hungerford was planning an "attempt to send a shaft of light to the moon" during a total eclipse of the sun on August 31. "Mr. Hungerford hopes that the shaft was [sic – will be?] reflected to some point north of here with sufficient strength that it may be seen with a powerful telescope. If this is done it will mean that he has established means of communication for which science has long sought but never achieved." The Associated Gas and Electric Company was to be asked to provide a searchlight "of sufficient strength to throw a beam so far a distance." But the article pointed out that the "Lindbergh beacon at Chicago", supposedly the world's most powerful searchlight, "can throw a light only 21 miles." Unfavorable weather conditions in themselves likely prevented Hungerford from shining a light on the moon. In any case, the Elmira newspapers had no report in subsequent days about the experiment.

An Elmira *Sunday Telegram* article from March 1963 featured a photograph of Hungerford with Cressy A. Mowrey looking at the solar eclipse of August 30, 1932 from the Elmira College observatory.[190] A report from the September 1, 1932 edition of the *Star-Gazette*, where a similar photograph was printed, explained that the 94 percent eclipse of the sun by the moon was observed through an image thrown upon a piece of cardboard. Hungerford demonstrated a knowledge of astronomy in explaining the irregular outline of the moon as "the shadows of mountains of the lunar orb. In a total eclipse the sun's corona, shining through their valleys, give the beautiful phenomenon known as Bailey' Beads. The corona is not visible except in total eclipse, Mr. Hungerford said."

Hungerford's interest in astronomy reportedly dated from 1909, when he had his "first telescope view of outer space. The planet Saturn and her rings so impressed him he reproduced experimentally the globe and rings for his scientific lectures." As early as 1936, Hungerford was reported "constructing models of the planet Saturn to be used in schools and observatories. . . "[191]

SPACE TRAVEL

Following the success of their rocket car, the Hungerfords hoped to power themselves off the earth. A proposed flying version of the Shirley Lois "The Moon Girl" was drawn by sign painter Robert N. Hopkins, Daniel's erstwhile brother-in-law.[192] Shirley Hyde recalled:

> [T]he hullabaloo when a sepia section of a New York City paper . . . ran a Sunday section on the rocket car. The article stated that Dan expected to go to the moon by a certain date, taking me with him. I must have been a first grader at Hendy Avenue School in Elmira at the time this was published, and I remember the taunting I took about my 'crackpot' father, and I was TERRIFIED then that he'd actually take me to the moon and I'd have leave my mother and maternal grandmother. By that time, my mother and dad had separated. I don't know whatever happened to that paper.[193]

In 1936 Hungerford contemplated leaving politics to "carry on experimental work." He was quoted as saying, "There are practically no inventions at present suited to explore the universe. I see man's destiny as involving the conquest of space and the occupation of the stars. Invention along this line is unlimited." And as a "solution to the death rate", he said, "we will call on science to raise the Bertillion measurements of a man to the nth degree – to the point where a man blown to bits by an explosion might be recreated from the measurement of himself on file."[194]

Cliff Towner wrote that just before he enlisted in the army in 1945, "Dan showed me plans and diagrams of his 'Dream Ship,' a three-stage rocket ship that would take a man to 'the Moon and beyond' as Dan put it."[195]

The German magazine *Der Stern*, in a 1958 article about Robert H. Goddard's experiments with liquid-fuel rockets, published photos of Daniel and Floyd with a liquid-fuel rocket motor, the Hungerford rocket car, and the artist's conception of the Hungerford rocket ship. The text accompanying the images said in his

Daniel and Floyd Hungerford: Rocket Power, Interstellar Travel and Eternal Life, by Geoffrey N. Stein. New York State Museum Record 4, © 2013 by The University of the State of New York, The State Education Department, Albany, New York. All rights reserved.

home town Daniel Hungerford was known as a "dreamer of dreams in the world of science [Traeumer von Traeumen in der Welt der Wissenschaft.]" The journal said the brothers had worked five years on their car. And that they intended to power airplanes with rockets, but when glider pilot Jack Omera, who was to fly a rocket-powered airplane, died in an accident, the brothers abandoned their plans.[196] A decade later Daniel Hungerford observed that the writer of the *Stern* story, Yevon [sic] Spiegelberg, who had come to New York to do her research, had said the article was to be printed in book form. Although the Hungerfords thought they "were entitled to a copy –we never got the book".

Hungerford thinking of rockets in 1964 said, "Every time one of those things goes overhead, I think we had a responsibility. . . .We started to make the rocket popular . . . and that was our contribution to rocket science."[197] But Frank H. Winter, a research historian at the National Air and Space Museum, wrote to the author in 1979 that in his "own extensive researches on rocketry of the 1920's and 30's. . . .I have not come across the name of Hungerford." Nor did he find that name in the published Goddard papers. Winter added, however, that many letters to Goddard were omitted. Furthermore, in the course of interviews for his *Prelude to the Age of Space: The Rocket Societies 1924–1940*, Winter noted "the rocket pioneer Roberson Youngquist recalled that one of his initial influences in rocketry and its potential was a rocket car he had seen at a state fair in the 20's and 30's."[198]

ELECTRO-MAGNETIC SPACE DRIVE

While the handbill promoting Daniel Hungerford's candidacy to the state assembly in 1948 mentioned among his accomplishments the "rotating electromagnetic field", the *Corning Leader* for November 25, 1957, reported that the Hungerfords had "more or less lost interest" in their electro-magnetic space drive model until news of the Russian Sputnik satellite. Now they were 'gearing up' again to continue their experiments.[199] The *Leader* said that Russian successes with satellites had renewed the Hungerfords' interest in space travel.

> "Just prior to World war II we discovered an invention my brother and I had developed had certain features which might be employed for national defense," he [Daniel Hungerford] said today. "So we filed that phase with the War Department and dropped further research – until now. And of course that phase cannot be revealed even now.
>
> "With the advent of the Russian satellites we have decided to bring our invention into the open, and perhaps add to man's great venture into outer space. We believe the machine could be used even to bring both Sputniks back to earth by peaceful means."
>
> He said he had also experimented with the use of acoustics to break up rings of iron filings with repeated success.
>
> Mr. Hungerford declared that in his opinion a rocket could take off from earth, hover or speed on its way, through a thorough knowledge of electromagnetic force in the universe.
>
> He said the electromagnetic field of the earth is well known, and is confident it can be used effectively all the way to the outermost areas of the galaxy of which the earth is a very small bit.
>
> The machine he and his brother built proves that theory, he declared.[200]

A portion of an undated Hungerford letter in the 1960s describes the construction of the electro-magnetic space drive model and, apparently, Hungerford's power of mental telepathy to control it. "If the combined mental Power of all the People of the Earth could be centered on the great Rings of Saturn could be smashed – just as the Children of Israel smashed the wall a [sic] Jericho – See Bible Story."

Steven Sekella related in 2008 that such a model was on the rear seat of the 1935 Pontiac automobile when Hungerford ceased driving it in 1964 or 1965.[201] As Sekella recalls the model it consisted of a wooden box with a bell jar on top. Inside the jar was a coil of wire in ball shape. There were two black knobs on the box and an external battery. Hungerford could control a ring around the coil, making the ring go forward and backward.[202]

A non-bylined story in the *Elmira Star-Gazette* for December 28, 1965 quoted Hungerford about the problem of a rocket using liquid fuel for travel to the moon. "With us the fallacy of the rocket is the great amount of fuel it takes. It took us a gallon of regular gasoline to go two miles." Instead, the Hungerfords reportedly devised a "theory of propulsion on electromagnetic drive" based on Hungerford's idea that a "moving charge of electricity had weight. Therefore, it has inertia." An atomic "engine" would produce the current needed. "We gave up the idea of electromagnetic drive 30 years ago because we were getting into deep water" But then he showed the reporter a letter from the National Air and Space Agency "welcoming a more detailed description of his electromagnetic drive theory."

Hungerford wrote to Marvin in 1964:

> Our idea of space travel is quite different – from that of the – Rocket People. We soon learned the fallacies of Rocket drives and turned our attention to

> developing an Electro-Magnetic drive and built a working model of our idea. We didn't actually develop drive but did prove that electricity has weight or that we were hitting the earth's magnetic field a terrific wallop?
>
> We laid our model away and haven't been able to locate it since. There is substance for a new story.[203]

And to the *Troy Record* (New York) Hungerford said,

> The Human Race is so busy exterminating itself—time was when men lived to be a thousand or so years old loosing [sic] that – he tried living thru his off Spring. Tiring of that he is too busy exterminating himself. The writer has however a different outlook on life – in spite of the fact [sic]were taught from childhood - that three score and ten was - is – the limit. Getting back more specifically to your query – the late Dr. R. H. Goddard – patented a lot of space travel schemes – the problem then as now was to get off the Earth – to employ them. Some 30 years ago – the writer and my late brother – Floyd S. Hungerford built a small model of an Electro Magnetic Space drive – the ideal Machine to – not only get off the earth and back on – as also on the other – planets – without breaking our necks. Showed considerable promise but lacking money and time we abandoned the project untill [sic] now but we still have to have help from our government or others or we may find ourselves stalled for another third of a century. Wish us luck.[204]

Of the Hungerford brothers' investigation into an "electromagnetic propulsion system", Igor Spajic said this would have used an atomic motor.

> Before atomic research narrowed into an orthodoxy of nuclear fission, the field was wide open. There were various theories in the 1930's on how to extract the usable energy from the atom, and physics laboratories tried different methods. Did the unique equations of the Hungerfords give them some special insight into this problem? What has become of the lost mathematics? As it was, the Hungerfords abandoned this line of research during the 1930's, admitting candidly that they were out of their depth.[205]

In the 1960s Daniel Hungerford returned to the electromagnetic space drive. An intriguing open letter of solicitation from Hungerford, undated but apparently from 1964, notes,

> Today, the writer enlisted the help and cooperation of two young men – Steve Sekella and Pete Oakley - in the development of an electro-magnetic space drive useful even in the earths [sic] atmosphere, and solicit your help in any form and capacity you may wish to contribute – postage stamps, trading stamps, or anything we can turn into money; engineering skill, labor, shop space and equipment, machinery, etc., etc.[206]

The "electro-magnetic space drives" are an intriguing concept unfortunately not made clear in the letter. But it seems that by 1964, rockets "in the short span of thirty odd years" had "proven quite useless as a means of propulsion for solar and for interstellar travel."

H. Steven Sekella and Peter Oakley, graduates of Elmira Free Academy in 1963, assisted the Hungerford brothers, especially Daniel. Sekella notes Daniel Hungerford wanted to set up the electro-magnetic space drive model in the yard outside the Hungerford house; Sekella and Oakley would have been happy to oblige for "With Dan we were ready for everything." Sekella, some forty-five years later recalls seeing the model, but doesn't know what happened to it. And he does not understand "what the project really was."[207]

In a letter to Marvin on August 13, 1964, Hungerford wrote unhappily that "Mr. Sekella is on leave from the armed forces but leaves for Germany this weekend. Mr. Oakley is attending an Industrial College in Corning, N.Y., so the writer will get little help from them for some time."

In September 1966, Hungerford made a drawing of the electro-magnetic space drive apparatus. Both the drawing and the accompanying explanation carry a date of conception, June 1, 1934, as well as the name of the inventors, Daniel David and Floyd S. Hungerford. The drawing was signed by John L. Sherman, a friend, on September 27, 1966, as a "witness." Hungerford's notes listed:

> Alphabetical letters are employed here to designate the component parts of a model of our idea of an electro-magnetic space drive – method - of driving craft through the universe – as - opposed to rockets.
>
> A – represents the blades of modern helicopters – with copper windings installed – inside – if – possible – otherwise auxiliary – blades – will –have – to be built - with – the –necessary copper coils - and –mounted – on – the – vertical shaft – and – above – the – present – airfoils.
> B – shows – copper – coil – M – section
> C – is – verticle [sic] - shaft
> D – is –blade –hub
> E – E – is [sic?] collecter [sic] ring
> F – shows –plan – of –blade

To you and who Ever,
Our Reply To the Race Riots,

This is the new concept! The Rocket Motor in the short span of thirty odd years just as our canals has attained its majority — and proven quite useless as a means of propulsion for solar and for interstellar travel.

The writer and my late brother, Floyd S. Hungerford, built, licensed and operated the first and only Rocket Car ever to run on the highways anywhere in the world.

Today, the writer enlisted the help and cooperation of two young men — Steve Sekella and Pete Oakley — in the development of an electro-magnetic space drive useful even in the earths atmosphere, and solicit your help in any form and capacity you may wish to contribute — MONEY postage stamps, trading stamps or anything we can turn into money; engineering skill, labor, shop space and equipment, machinery, etc., etc.

So vast and comprehensive are our plans that of the three plus billions and billions yet unborn — human beings ever thruout eternity — as individuals or groups be out of employment there will be no limit on the amount of time each can serve with the limits of his strength and capacity.

We don't seem to realize machinery in our homes has displaced our Negro men and women servants as also whites without providing new employment or place to go. We are in the position of a baby chick picking at its shell to get out and grow and live.

This may seem sacriligious to some but we can't wait any longer for the return of Jesus Christ to settle our problems — we have waited nearly two thousand years — already, we must now take the bull by the horns and solve our problems in a way we know is just and right.

We have tried waste in every conceivable form, including war, murder and suicide. Now get to work and live and let live.

Sincerely yours,

Daniel D. — Floyd S. Hungerford
822 W. Second St. Elmira, N.Y. 14905

Figure 25. Seeking funds for developing the electro-magnetic space drive, this letter from Daniel Hungerford ca. 1964 said, "postage stamps, trading stamps or anything we can turn into money" would with "vast and comprehensive are our plans . . . there will be no limit on the amount of time each can serve with the limits of his strength and capacity."

ELECTRO-MAGNETIC SPACE DRIVES
SOLAR AND INTERSTELLAR
ROCKET MOTORS
FOR
AUTOMOBILES - AIRPLANES - GLIDERS

823 WEST SECOND STREET
ELMIRA, NEW YORK 14905

Copy - Steve

Mr Harry Steven Sekella - Oct. 2 - 1966
Some where in germany.
~~on the~~ European continent.

Dear Steve:

Thanks for the Xmas and Birthday Cards and the many letters in ~~the~~ between - I'm a lot better than I've been there the Past two years - I had to go on Co. welfare - last (1965) year - got $54.00 Per. m, To live and my rent Paid Here ($50.00 Per m) for two rooms - water - gas - Electric - and share a Refrigerator - Share - Bath Room - with four others - man and wife and two children all very nice - but not the life for me - I lost my 3 V. Second St - last (1965) December - 26 - for rent arrears - and was Evicted Last Spring - 6 or 7 - fully armed cops - 2 - People from the Co. welfare - 2 - reporters from Camp - Leader - City Constable with Eviction Paper - then a City Truck with 3 - men - a load of 3/4" Plywood Panels - came in to the yard - they removed the Screen doors from the house and proceeded To nail same over doors and windows there was an ambulance with 2 - men in it - they were going To take me To the County House at Bredsport, my, before this a couple of weeks they came for me - I got in To old Ford, and drove - To Pennsylvania - Pa, left them standing twiddling their thumbs and looking a friend of - mine - He was there and told me about it when I came back. Dalzimples contractors have the contract, To smash Ten or 12 - Houses our was to be the first - but its still standing - I have 2 - Friends - Russell Burr and John Sherman a 6 foot 3 - Former world war 2 - commando - Chief says he had 600 men under him .. and (2 - only 1 - now) lawyers Helping me, the city is not so sure of it self - now we intend To get the Property back, all my Personal Effects - Tools - unfinished Inventions - Family Relics - furniture and etc, are Sealed up there and I'm not allowed in the house, John Sherman has a key

YOURS SINCERELY FOR A NEW CONCEPT

Figure 26. This stationary used by Daniel Hungerford in 1966 mentions assistants, H. Steven Skella and Peter Oakley, 1963 high school graduates from Elmira Free Academy. The heading included *Hungerford-Sekella-Oakley/ Electro-Magnetic-Space Drives/ Solar and Interstellar/ Rocket Motors/ For Automobiles-Airplanes-Gliders.*

G – edge - view – of –blade
H – metal – brush – not shown
I – positive terminal
J – negative terminal –grounded to frame
Dynamo – and –magnetic – lines not shown
Remarks
Our – present – model – is made of wood and necessary – metal parts –was made thirty – odd - years – ago- and – tested- to a certain – point –and – laid – aside –until now.

In August 1966 Hungerford wrote that in 1965 [sic], he had asked the National Air and Space Administration for a $250,000 check to help develop the concept of "electro-magnetic space drive". It "took 4 months to reply in the negative."[208] Apparently, a letter from Edward R. Redding at N.A.S.A. in December 1964 had been encouraging. Hungerford replied that, "We can get some where with this thing now." Hungerford continued with some history of his space drive development

> Some 30 years ago my brother Floyd and I built a working model of our idea of an electro-magnetic space drive. We didn't develop drive but did develop terrible agitation [of?[the whole machine when we electrified our coils. We dropped the project until. . . .] There was no atomic [sic] engine of necessity for our project. We cant. . .[209]

Hungerford concluded his letter to Redding by noting his need for ten to twelve thousand dollars "and more as the work progresses." He asked about "protec-

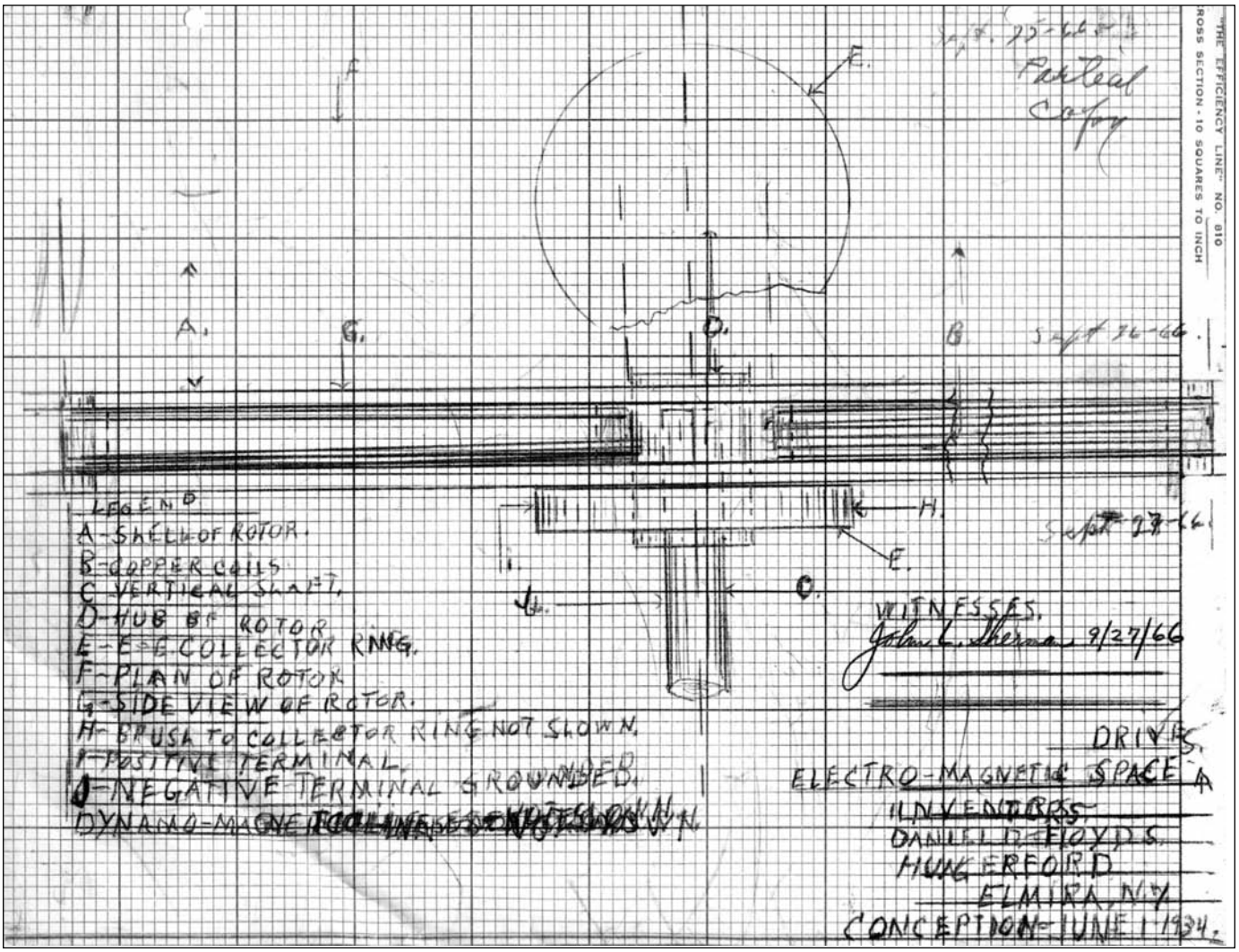


Figure 27. Daniel Hungerford's drawing of the "electro-magnetic space drive" dates from September 27, 1966 and witnessed by John L. Sherman. The Hungerfords "conception" on the drawing is dated as June 1, 1934.

tion" since he had no patents. And he finished by stating, "We have always paid our way, Mr. Redding-. Have never asked our government for help before and have never been offered any."

In September 1966 Hungerford telephoned the Grumman Aircraft Engineering Corporation at Bethpage to promote his electro-magnetic space drive. Mellor A. Gill, a patent counsel, in a follow-up letter advised Hungerford that Grumman

> would be willing to consider your idea if submitted on a non-confidential basis in which you rely upon the patent rights you now have or may hereafter acquire. If this is agreeable with you, it is suggested that you submit sketches and descriptive material sufficient to enable our engineers to comprehend fully the construction and operation of your device.
>
> After receipt and evaluation of same, we will then advise you as to whether or not Grumman is interested in undertaking the development...or acquiring any rights with respect thereto.[210]

Then, having been rejected by Grumman, Hungerford turned to Keith C. Richardson, "chief electronics engineer" at the Conelectrics, Inc. facility in Southport. In a letter, Hungerford noted refusal of funding by N.A.S.A. and mentioned Amtorge Exporting Corporation in New York City but "that would have to be a despert [sic] move on our part." He concluded his letter by noting the importance of H. Steven Sekella to the Hungerford enterprise since he was crippled with osteomyelitis (a bacterial or fungi bone infection). Unfortunately, Sekella was stationed by the military in Germany.[211] In another letter he observed that his contact with Amtorge potentially would "send me to Russia."[212]

In August 1966, Hungerford wrote to his friends Erwin D. and Helen French,

> Floyd S. & I intended to be the first men on the moon – and may be yet. N.A.S.A. rocket is hellish. Blasting a capsel [sic] with a baby rocket will require the astronauts to eject and soft land by a stream of fire (rocket) on the moon – carrying enough fuel to blast off climb up to and orbit fast enough and reenter the parent capsal [sic] and return to earth. (We don't say it can't be done) but will take some doing. Where as with our electro-magnetic space drive – you simply haul your space ship out of the hanger-take off easy (no Cape Kennedy) climb up to the top of the atmosphere – cut in your electro-mag. Stop in space –Hover if you wish –go on – ease your ship on to the moon or move to any point on the moon – Even on the back side which we've never seen – even the photos of the back side reveal nothing to my satisfaction. There can be air and water there. We proved with our Electro models this is true for any [?] thing of a liquid nature – Even dust. . . ? . . . to centrifugal force to support the moon at a quarter of a million miles the earth has to back off 1000 miles. The latters Polar axis enscribes [?] years. Our year is 12 months with varying number of days.[213]

In October 1966 Hungerford wrote to Sekella that he had located the parts of the electro-magnetic space drive machine but because of his physical problems he could do nothing with them. In the future, Hungerford and Sekella would pursue the development of the space drive together.

> In the event of success, Steve it will be a terrible blow to the rocket business – we would back the machine out of the Hanger – climb up to the top of the atmosphere –start the dynamo –cut in the magnets – hover in space –stop –land on the moon on magnet Power – Hop from place - to place. We'll be using an atomic engine – go on to Mars & etc. & etc.[214]

Also in 1966 Hungerford wrote to *Mechanics Illustrated* magazine offering to sell the story of Floyd's and his electro-magnetic space drive "for space vehicles – as opposed to rockets – our machine was to be powered with an atomic engine –none in existence at that time." He concluded his letter by noting, "I can't sell the story for $5.00 [$5,000?] – make me an offer. Its [sic] got to be good [great?]."[215]

In January 1967 Hungerford wrote to Sekella that the electro-magnetic space drive still "needs lots of development – We'll discuss the future of same when you get home" from Europe. In the meantime Hungerford said he was "working on a machine of a different nature – that may have some promise – something we (I) can do here in my two little rooms—."[216]

While in Germany Sekella wrote a series of letters to Hungerford. In one he wrote that if he were able to get back to Elmira in the next summer he hoped "we can get a lot done. I only wish I was back there now working for you, I really enjoyed the times we were together there."[217] On September 30, 1964 Sekella wrote asking, "Has Pete [Oakley] kept in touch with you? Is there any news on our project." On December 7, 1964 Sekella wrote in part to ask, "Is there any news on our venture. Have you located the model or drawn up any plans?" And in an undated letter, probably from early 1965, Sekella wrote, "I hear you found the model, [sic] this is good news. I wish I were back working around your place." Meanwhile, it seems that Hungerford had little contact with Oakley. Sekella, too, had little news of

Oakley who been attending college. In an undated, probably 1965 or 1966, letter to Hungerford Sekella wrote, "I haven't heard from Pete for a long time. I hear he moved to Horseheads."

After ruminating on the benefits of electro-magnetic drive Hungerford's solicitation letter (1964) turned to the answer for all of civilization's problems.

> So vast and comprehensive are our plans that of the three plus billions and billions yet unborn – human beings ever thruout [sic] eternity – as individuals or groups be out of employment there will be no limit on the amount of time each can serve with the limits of his strength and capacity.
>
> We don't seem to realize machinery in our homes has displaced our Negro men and women servants as also whites without providing new employment or place to go. We are in the position of a baby chick picking at its shell to get out and grow and live.
>
> This may seem sacrilegious to some but we can't wait any longer for the return of Jesus Christ to settle our problems, - we have waited nearly two thousand years – already, we must now take the bull by the horns and solve our problems in a way we know is just and right.
>
> We have tried waste in every conceivable form, including war, murder and suicide. Now get to work and live and let live.[218]

In an early August 1964 letter to Marvin Hungerford probably referred to the broadside. "[W]e have just had a batch of leaflets struck of which we feel sums up our troubles pretty well – and was inspired by Vincent S. Jones – Executive Editor of the Gannett Newspaper in Rochester, N.Y. July 29 – 1964 . . ." At the top of the solicitation letter in the example preserved by Marvin, Hungerford wrote, "To you and Who Ever, Our Reply to the Race Riots."

The bottom of Hungerford's stationery of the 1960s is imprinted with "Yours Sincerely for a New Longevity." Jon Elan Steen alludes to Hungerford's belief in an extraterrestrial existence.

> Uncle Dan always wanted to go to the moon but he never made it of course, or did he? I remember he had some interest in or about perpetual motion. I recall Dad [Stephen Viele] going there and I heard the chit chat but I wasn't much interested. It may have related to the mechanical aspects of jet engines, turbine power? I have often given thought to perpetual motion myself, but in a different aspect which is not at all mechanical. As far as I can figure the Soul is capable of perpetual motion – or continuation – i.e., reincarnation, but that doesn't have anything to do with jet rockets. I do not know what Dan's eventual opinion may have been, but it is an interesting idea although I consider it to be somewhat impossible if applied as Dan was interested in using it, i.e., for a mechanical means of motivation or power.[219]

Following Floyd's funeral in December 1963 grandnephew Stan Hungerford drove Daniel to the burial in Woodlawn Cemetery. En route Daniel Hungerford told Stan, "We don't have to die."[220]

In June 1964 Hungerford ruminated about his advancing years and the possibility of extended life spans.

> As Floyd and I saw it – the time and equipment inevitably must come when many will be making trips thru the universe that will consume millions of years. Recognizing the Destiny of Man – as involving the conquest of space – the occupation of the stars and the attainment of eternal life on this side of the grave – we have got to quit teaching death and begin teaching life, and methods to attain it. . . .
>
> This business of living millions of years is a pretty big order – for which I have no takers. A subject for another story – later.[221]

The March 3, 1963 *Sunday Telegram* printed that the "current space race has resulted in the following letter" according to E. D. French of Waban, Massachusetts. One assumes the letter was submitted by Erwin French, who for many years in or near Elmira had maintained a friendship with Hungerford.[222]

> To the Editor:-
>
> I am wondering what our good friend Dan Hungerford is thinking. Will his thoughts go back when he and few others - very few – had the vision of space travel?
>
> Will he remember the ridicule from those "modern" who at that time (1930) referred to him as "a dreamer," "up –in-the-air" etc.? Will he think of his lectures to science groups at Elmira College, Cornell and other like institutions only to have an uninterested audience?
>
> Will he bemoan the fact that space travel is near reality; that he reaped no financial rewards for his achievements?

These are questions in the writer's mind; also in the minds of many Elmirans, I feel certain.

As before stated, the number who had the "dream" was limited to few men. Dr. Goddard was one; Max Valier (Germany) another and one or two from Smithsonian and Dan and Floyd Hungerford, Elmira.

Yes, I wonder what Doctor Goddard would say, what Max Valier would say and your home town man, what does he say?

ENDNOTES

[188] Daniel D. Hungerford to H. Steven Sekella, January 12, 1967.

[189] Sekella to author by telephone, November 3, 2008.

[190] A similar photograph appeared in the *Sunday Telegram* for March 8, 1970.

[191] Unidentified 1936 newspaper clip.

[192] Soon after Hopkins and Hungerford married, Robert Hopkins himself married and by 1920 resided as a sign painter in Gettysburg, Pennsylvania. Robert Hopkins returned to Elmira and operated the Hopkins Sign Company.

[193] Shirley H. Hyde to Geoffrey Stein, September 9, 1992.

[194] Quoted in an unidentified newspaper clip from 1936.

[195] Cliff R. Towner to Geoffrey N. Stein, November 22, 1994.

[196] Vol. 11 no. 12, May 17, 1958. "Aber als der Segelflieger Jack Omera, der mit dem Raketenflugzeug starten sollte, toedlich verungluckte, liessen die Brueder Hungerford ihren Plan fallen."

[197] Daniel D. Hungerford to Alton V. Sliter, editor and publisher of the *Troy Record*, August 13, 1964.

[198] Frank H. Winter to Geoffrey N. Stein, July 16, 1979. Syracuse, site of the State Fair, was one of the venues Keith Martin noted as a Hungerford rocket car demonstration.

[199] November 25, 1957.

[200] Hungerford noted on the newspaper clip that "missile" is more accurate than "rocket" here. The article dates from November 25, 1957.

[201] George Mapes told the author by telephone on September 29, 2008 that the Pontiac was a gift to the Hungerfords from Mapes' uncle, Rolla Dickson. Earlier Mapes had borrowed the car from his uncle for dates since he rode a motorcycle. Later, with Hungerford ownership, the car was not in good shape Mapes recalls. The vehicle was shifted from first to third gears since second did not work.

[202] Sekella by telephone to the author, November 3, 2008.

[203] Daniel D. Hungerford to Keith Marvin, May 18, 1964.

[204] Daniel D. Hungerford to Alton V. Sliter, August 13, 1964.

[205] Spajic, *Restored Cars*, Number 140, May-June 2000, p. 16.

[206] The letter refers to "my late brother, Floyd S. Hungerford", who had died December 19, 1963.

[207] Sekella in telephone conversation with the author, November 3, 2008.

[208] Daniel D. Hungerford to "Ed & Helen", August 26, 1966. A photocopy of a handwritten letter dated November 24, 1964, asks for a response to his letter of October 17, 1964, in which he, apparently, requested funding. The November letter has no inside address, but a notation of a copy to Congressman Howard W. Robinson suggests the main recipient was a government agency. Hungerford wrote, "We built our model some 30 years ago now I need the work." On October 2, 1966, Hungerford wrote to Sekella that the amount requested from N.A.S.A. was $150,000.00.

[209] Daniel D. Hungerford to Edward R. Redding, December 16, 1964. Only a partial photocopy of Hungerford's letter was available to the author.

[210] Mellor A. Gill to Daniel D. Hungerford, September 19, 1966.

[211] The letter, signed "Daniel D. & Floyd S. Hungerford by D. D. H.", is dated October 27, 1966. For information about osteomyelitis see author Steven Schmitt in *The Merck Manuals Online Medical Library* (February 2008).

[212] Daniel D. Hungerford to "Ed & Helen", August 26, 1966.

[213] Daniel D. Hungerford to "Ed & Helen", August 26, 1966

[214] October 2, 1966. The inside address for Sekella, who was stationed with the army in Germany, was "Some where in Germany or on the European Continent" In November 2008, Sekella wrote the author, "I believe the electro-magnetic model was with Dan on E 3rd St."

[215] Daniel D. Hungerford to *Mechanics Illustrated*, September 30, 1966. Hungerford's handwriting makes recognition of some of his words difficult.

[216] Daniel D. Hungerford to H. Steve Sekella, January 12, 1967. In a postscript, Hungerford noted that he hadn't seen Pete (Oakley) since Sekella went to Europe. Perhaps Hungerford had in mind the "self-moving wheel" project.

[217] H. Steven Sekella to Daniel D. Hungerford, no date (probably early 1965).

[218] Much of the content of this solicitation document appears to be based on a hand-written "Our Philosophy of Life" dated by Daniel Hungerford May 23, 1962. That statement begins, "Based upon the fact we are here for no reason of our own …why not make the best of it? And recognizing the destiny of man as involving the conquest of space – occupation of the stars – and the attainment of eternal life – on this side of the grave – let us – strive – together…" A copy of the "Philosophy" was made available to the author by Linda Lathrop.

[219] Jon Elan Steen to Geoffrey Stein, July 30, 1992. Stan Hungerford, August 13, 2009, another William Hungerford grandson, told me Daniel Hungerford in the early 1960's was working on his perpetual motion machine.

[220] Stan Hungerford to Geoffrey Stein, August 13, 2009.

[221] Daniel D. Hungerford to Keith Marvin, June 24–25, 1964.

[222] While he grew up in Steuben County, French worked for decades as a grocery store manager in Elmira. He was employed at the Remington-Rand factory during the Second World War. Before he left Chemung County he was a "confectioner". French was a participant in the Hungerford picketing to preserve the Langdon house in 1939, and he was involved with socialist politics in Chemung County.

Chapter Eight

THE FINAL YEARS

In 1961 Daniel Hungerford negotiated with Otto P. Kohl of the Glenn H. Curtiss Museum of Local History in Hammondsport, New York as well as with William E. Dion of Wilbraham, Massachusetts about the sale of early aircraft and parts retained by the Hungerfords. In a letter to Dion, Hungerford mentioned a figure of $6,000 for all of the material, including incomplete airplanes, propellers, engines and engine parts. Hungerford added that Dion's offer to take a rotary engine and the JN-4 stored outside the Hungerford house would not be of much help since it did nothing to clear space in the shop "which we desire very much-." And he said that while Curtiss offered much less, the museum promised "privileges and recognition in the museum that is almost equal to eating our cake and still having it and does not include the little 2-cyld [sic] engine Floyd and I built back in 1909-1910. . . ."[223]

In the end the Curtiss Museum acquired much Hungerford material. Two rebuilt Curtiss airplanes, three Hungerford-built (or rebuilt) engines and a Curtiss engine from the Hungerford brothers are in exhibit galleries in 2013. Although negotiations over the prices paid endured into 1966, as described below, a file note at the Curtiss Museum dated March 1994 lists "Hungerford Donations" including the Jenny and Oriole airplanes, an ox yoke, a gas lamp, a joy stick, a "Club Prop" and "prop on the Le Rhone".

Keith Marvin, a *Troy Record* reporter and music critic from 1946 to 1974, wrote hundreds of automobile history articles, many about American automobiles of the 1920s and about license plates around the world.[224] One obituary said Marvin contributed to "every antique automobile magazine published in the country." Another article claimed Marvin's stories about the 1920s were "the only written record of a forgotten period", while the Society of Automotive Historians and other organizations "bestowed their highest honors on him for his research and writing."[225] As a founder of the Automobilists of the Upper Hudson Valley, Marvin served for years as the editor of *The Automobilist*.

With the *Automobile Quarterly* in 1965, Marvin's pioneering "The Wizards of West Second Street" presented readers with the dramatic history of the Daniel and Floyd and their rocket car.[226] While Marvin is credited, rightly, with researching and writing Hungerford rocket car history, he was, according to Hungerford, not the first to "call on us for a story."

> Harry Buel [sic] – his father was the Editor of Syracuse Standard – took the actual picture and others of my brother Floyd S. and me away back in 1932 – or – 33. Harry put on a display about that time with a Rocket (fireworks rocket) procured sled with standard (pyrotechnic). Rockets – a bundle on each side of his airplane fuselage shaped –rocket – traveled about 100 feet on the ice on Oneida? Lake – crashed into the snow bank along his path. No damage. Harry came here – he said to learn how we ignited the fuel in our Rockets. Same was done with standard AC spark plugs same as in our chevy car engine.[227]

Ralph L. Hodge (1902–1977), a resident of the Capital District, knew about the Hungerford rocket car "in its earliest days of existence."[228] In the 1930s Hodge lived and worked in Elmira employed as a traveling salesman, a laborer and a machinist.[229] Later having moved to eastern New York, he worked as a furniture refinisher and as a machinery operator at the Watervliet Arsenal.

Hodge and Marvin were acquaintances in the Albany area. Their conversations about the Hungerfords' rocket car were mentioned in a 1980 article by Jim Dix:

> Keith Marvin learned about the rocket car from Hodge. Jerry Hendy in 1980 wrote that Marvin a well known automotive historian . . . passed through Elmira in his 1924 Wasp on the Glidden Tour in October 1963. He heard of a strange car from his friend Ralph Hodge who was from Horseheads. While in Elmira he spoke to four people concerning the Rocket Car but he received the

Daniel and Floyd Hungerford: Rocket Power, Interstellar Travel and Eternal Life, by Geoffrey N. Stein. New York State Museum Record 4, © 2013 by The University of the State of New York, The State Education Department, Albany, New York. All rights reserved.

typical reaction – the Hungerfords were crackpots. He did learn the Hungerford's [sic] address. . . .[230]

Back in the Capital District with the Hungerfords' address in hand, Marvin wrote a letter on December 17, 1963 asking about the car. On December 19 Daniel Hungerford gave the letter to Floyd who went "upstairs to read it and to rest. He never woke up. . . .and somehow the older brother couldn't regard this timing as simple coincidence. Whatever it was, it convinced Dan that he should see us."[231] Hungerford finally responded to Marvin's letter in April 1964, writing that the coincidence of letter and Floyd's death meant, "There is something radically wrong – here. . ."

Thirty years later, Marvin recalled in *Old Cars Weekly News & Marketplace*:

> I first became aware of the car in 1963 from a friend, the late Ralph Hodge. . . .I tried without success to learn more on the car while in Elmira that fall. The answer was the same from everyone I questioned. They knew nothing about it.
>
> They knew but they weren't talking. As an investigative newspaper reporter at the time, I could sense a certain fear in their collective attitudes. The brothers were known – behind their backs – as "wizards" and they were both still living in Elmira.
>
> Ralph and I drove down to Elmira in the spring of 1964 and, as nearly as we could determine, were the only persons he'd [Daniel] received since the death of his brother. He believed that the two of them consisted of one mind in two bodies and after Floyd's death always signed his letters, "Daniel D. and Floyd S. Hungerford by D.D.H." This might seem strange to the reader. I thought so, too, until after I'd spent a number of hours in that house and saw things not of this world. I think Daniel may have been correct in his conviction. An elderly, long-bearded man, he virtually lived in an overstuffed chair in his cluttered living room, with a pair of crutches and a loaded shotgun within easy reach. There was no telephone and no doorbell, his only contact with the outside world was a boy who brought in groceries and other necessities as needed. He was suffering from an advancing bone deterioration in both legs but could still maneuver about the house.[232]

Hungerford invited Marvin to stay in the West Second Street house on the latter's visit.

> We have an 8-room house here – but the rooms are so cluttered with junk, etc. However, my late brother Floyd's room is available – the bed needs a new mattress, etc., and except in the winter we don't have hot water – have to heat some on the oil cook stove. Then there is the Mark Twain Hotel, etc. or you might have a sleeping bag?[233]

As far as transportation to Elmira was concerned, Hungerford wrote Marvin that

> Our car at this time fails to meet law requirements but I can get my neighbor to bring me to the airport if you so desire, and let me know time of your plane arrival. You will be quite likely to come by auto –or buss [sic], if the latter – I can meet you in our 1935 Pont. [sic] Sedan – or taxis are close by.[234]

Marvin and Hungerford exchanged a number of letters in 1964. Marvin proposed writing a history of the rocket car and its builders, a suggestion that Hungerford found worthy. On May 19, 1964 Marvin wrote to propose a visit to Hungerford in early June and added that he wanted "in every way to create a story which will bring to the public attention the men who had the vision to create a workable rocket and I already have an interested magazine editor working on the idea. Meanwhile I am guarding your pictures with my life."[235] Marvin indicated to Hungerford that he had an exclusive story in mind. Hungerford assured Marvin, "We are protecting your interests to the full. Will see you June 6th – Sat. P.M."[236]

Money was an incentive for both Hungerford and Marvin in the publication of the Hungerford story. In May 1964 Hungerford had a look at the car "for the first time in months." The man on whose property the car was parked apparently wanted to display the car at "A Firemens [sic] doings in Big Flats". He added that, "I need any money I can get – but not at the expense of our story."

Marvin responded:

> I only wonder how deeply you may be committed for the Big Flats display as there may be a good reason why this COULD be detrimental to our story. I don't go into details in writing but will discuss the matter with you in Elmira on Saturday.
>
> In any event, I should appreciate all confidences with the man who wants to display the car. I just may have a suggestion which may appeal to you more and which might possible [sic] make more money for you. . . .and as I have said, whatsoever I can make on this story will be shared with you.[237]

Marvin sent his draft "Wizards" article to Hungerford who made the requested corrections and additions. Marvin had stressed to Hungerford that "my basic precept. . .is to place the great man in the place I've

Figures 28. A photograph of the rocket car in 1964 shows the deteriorated condition of the body. License plates witness the last registration in 1952. Daniel Hungerford posed behind the car.

felt he belongs, since I first met him. Therefore, do please feel free to make any suggestions. . ."[238]

Money also was an incentive for Hungerford to go to Eldridge Park, a picnic ground and amusement center, on August 1, 1964. Ralph Hodge had telegraphed that a Remington electric shaver was to be awarded at the Elmira Centennial Family Day picnic to the winner of the "beard grooming event." The *Sunday Telegram* the next day reported that with a beard reaching almost to his waist Hungerford "seemed to have started preparing for the contest about three years ago." Hungerford wrote Marvin that he'd put the shaver up for sale "at 5,000.00 collectors [sic] item, details later."[239]

A surviving photocopy of an "option contract" between Hungerford and Ralph Hodge dated June 6, 1964, in consideration of a $100 payment gave Hodge a ninety-day option to purchase the car "owned by HUNGERFORD ROCKETS" for $5,000. Of the arrangement for transferring the car to the Albany area, Marvin wrote, "It was decided that Ralph and I would bring it to New York's capital district and try to sell it for him. . .with the understanding that ownership would revert to us in the event of Daniel's death. Ralph's attorney, Daniel S. Dwyer of Albany, joined us in the arrangement [,] and I nearly sold it to the late William Harrah who operated Harrah's Automobile Collection in Las Vegas." In 1994, Marvin related that the rocket car came to Ralph Hodge with the understanding that he and Marvin would sell it for Hungerford, who hoped to receive a large sum.[240]

Dwyer seemed to have taken a more direct interest in Hungerford's affair. Apparently in a visit to Elmira, he and Hungerford talked about the latter's social security status ("he has his doubts.") And Dwyer "took my case" in an automobile accident in which Hungerford was a passenger in a vehicle rear-ended December 24, 1963, by a truck equipped with a snow plow.[241]

It appears that Hodge received materials from Hungerford beyond the rocket car itself. On June 25, 1964, Hungerford wrote to Marvin that "Ralph is coming over here on July 4th for more items and if possible – bring money for any thing he may have sold in the meantime."

Hungerford wrote to Marvin in late August 1964 that Hodge's ninety-day option for the acquisition of the rocket car would expire on September 5 or 6. Hodge, through his attorney, Dwyer, was "sending out form letters to various prospective buyers". Hungerford asked Marvin to deliver to Dwyer (or Hodge?) " our file – photos – letters –newspaper articles – especially our German papers – letters and photos – this will include letters from Miss Yerman [?] and or copy of Potter Newspaper, Pa."[242]

Hodge replaced the deteriorated body on the rocket car with new, sheet aluminum construction. Replacing the heavier wheels the Hungerfords had installed, Hodge mounted wheels similar to the original Chevrolet items. Marvin said the car was "run in a number of civic parades and other events in New York State's Capital District. In the fall [sic] of 1965, it was exhibited at the Watervliet Arsenal. . .and Daniel Hungerford was reunited, for the last [sic] time, with the automobile he had conceived, nurtured and promoted."[243]

In October 1966 Hungerford wrote to Sekella of his trip to Watervliet the previous year.

> Year ago last May 15th, Rick Chase of Millport, NY took Botsford and me to Watervliet arsenal – to see the Rocket Car on display – was the main attraction at the 14th arsenal display of the army's doings. I was photographed and answered a million questions. One man came up to me - He had 2 boys – and wanted to photo – us I did - said he rode in the car [at Champlain College] – with Geo. W. Mapes – a very good friend of mine He and Floyd –were always at Swords points – one day –in our shop Geo pushed Floyds hand against a hot furnace – you should have seen the fire fly then.

Hungerford wrote about a second trip east in September 1966 that "was in a sense, hellish." His crippled state made carrying luggage difficult, and he had to rely on help carrying his things, "in many cases old ladies." Hungerford traveled to Schenectady by bus planning to visit his friends Erwin and Helen French in Gloversville (formerly from Horseheads) but learned they were "out of town, return Oct." After buses to Albany and Troy, Hungerford took a cab to Cohoes.[244]

Figure 29. Daniel Hungerford was at the Watervliet Arsenal event in May 1965. The two boys were children of a man who had been a friend of George Mapes at Champlain College.

Hungerford spent the night with Mr. and Mrs. Ralph Hodge and their son in Cohoes, where Hungerford was hoping to sell the rocket car for $50,000 he wrote to Henry G. Budd. From there, Hungerford visited his daughter and son-in-law at Claremont, New Hampshire.[245]

To Sekella, Hungerford wrote that after New Hampshire he stayed with "old and young friends a few days - out on long [sic] Island – did some business on their phone". Total expenses for the trip were $40.40 of which Norman Hyde paid the bus fare ($8.90) from New Hampshire to New York City.[246] One wonders if the home where he stayed was that of John Albee. In New York City, Hungerford, one surmises, sought a black lawyer to help with his effort to regain the property on Second Street in Elmira (see below).

EVICTION

After the death of their mother in 1944, Daniel and Floyd lacked housekeeping and maintenance for their house at 823 West Second Street. By 1950 many who passed by the Hungerford property saw shabby buildings with overrun yards. Even the rocket car also was a problem; once on a local street the car, although powered by the original Chevrolet engine, frightened a horse that ran away, pulling a milk delivery wagon.

A mother on nearby Edgewood Drive told her son, "Don't go down there. They are crazy." Of course, Richard M. Schaeffer said, he and his friends went, ca. 1951, as quickly as they could to see the Hungerfords' property. The boys investigated objects in the yard, even sitting in the aircraft, but they did not enter the house. The Hungerford brothers saw their trespassers and asked them to leave. While the brothers were polite, neither gruff nor fierce, parents worried about their children being near the Hungerfords.[247] Another boy heeded his mother warning to stay away from the "crazy" Hungerfords. Still he peered the front yard of "wondrous" junk and ran "away before they caught us."[248]

Protesting ca. 1959 in a letter to the editor the "fantastic salary" of $12,000 proposed for a new children's court judgeship, Daniel Hungerford wrote he could not support such a new burden on taxpayers. While he formerly proposed higher pay and shorter hours for public employees, those were days when he could "earn and spend money with the reckless abandon of a sailor." Now he was to be "very fortunate if I can earn enough money in the next two or three months to pay my tax arrears and save my home for which I have labored these many years – 48 years to be exact."[249]

Cliff Towner wrote that he had lost contact with Daniel Hungerford until the middle 1960s, when working as state editor for the *Corning Leader*, he heard from the Horseheads bureau chief that the Elmira police department had issued an all points bulletin for Hungerford to serve an eviction notice for non-payment of taxes. Hungerford himself wrote a few weeks later

> . . .one of 10 houses to be smashed had to be the first to go. So left the hearing within 3 days to vacate. I told Russ [Russell] Barr – my plans. He said good – 2 hours before the 3 days expired on May 19 -1966 I . . . got in Pontiac and drove to Troy, Pa at noon on the 13th several armed policemen – Mr. Fulkerson - an ambulance with 2 men and Mrs. Fulkerson had a doctor recommend too that I should go. – I got my lunch in Troy, Pa. then went to Canton, Pa. got my supper – the hotel being closed. I drove back to Abba, Pa. and a big auto wrecking years. Slept in my car – next day I drove back to Canton got my breakfast looked around there until noon got my lunch drove back to the junk yard stayed all night in the car – the radio and Star Gazette and …were trying to locate me. Then there were going to put on a 13 state coverage hoping to locate me – Bar got scared – got a hold of Raymond Hungerford [nephew] and came to locate me- and did after an all night search. Took me to Raymonds then reported me found and o.k. For some reason that can't get radio or TV in the Canton area. So nobody knew of my absence in Elmira
>
> Then Barr came to Raymond and got me said I could go to 823 for 2 weeks but couldn't stay in the house night. I stayed 3 nights left all lights off on the 4th day I was sitting in the yard when several prowl cars, an ambulance – 2 people with the welfare, the constable came handed me an eviction notice – I thanked him -7-fully armed cops came into the yard- but wouldn't talk then a city truck 3 – men and a load of ¾" plywood panels backed into the yard but wouldn't talk then the men removed the screen doors from the front of the house and begun nailing the panels. Every time nail was driven a star fell from the U.S. Flag Then the Black Flag of Piracy with the skull and cross bones appeared that I've seen ever since. You should see the people cringe when I tell them that.[250]

Figure 30. Photograph of Daniel Hungerford among papers inside his house at 823 W. Second Street ca. 1964.

Towner in his newspaper tried to help the man he considered a friend. In a column published in the *Leader* under the title "Open Letter To A Missing Octogenarian", Towner wrote

> Where are you, Dan Hungerford?
>
> Elmira city officials are worried about you because you didn't come home Thursday. An 80-year old man should be at home late at night, they feel.
>
> Did you know the concern was so great that a City Constable sat on your front porch from 12 Noon to midnight Thursday and planned on taking up his vigil there again today?
>
> You see Dan, as of noon Thursday, the home you've spent your life in is no longer your home. It is the

Thirty Days' Notice to Terminate Tenancy

TO DANIEL HUNGERFORD, TENANT:

823 West Second Street, Elmira, New York (Address.)

YOU WILL PLEASE TAKE NOTICE, that the undersigned, landlord of premises known as No. 823 West Second Street, City of Elmira, N. Y., and now occupied by you as tenant, elects to terminate the said tenancy and that unless you, such tenant, remove from said premises on the 14th day of May, 19 66, the day on which your term expires, the undersigned, such landlord, will commence summary proceedings under the statute to remove you, as such tenant therefrom.

Dated, Elmira, N. Y.

April 13, 19 66.

CITY OF ELMIRA

By Carl E. Stanford City Manager

Landlord. City Manager

STATE OF NEW YORK:
COUNTY OF CHEMUNG: } SS

, being duly sworn, deposes and says: That he is over the age of twenty-one; that on the day of April, 19 66, at # 823 West Second Street, in the city of Elmira, N. Y., he served the foregoing Notice on Daniel Hungerford, of Elmira, N. Y., by delivering to and leaving with Daniel Hungerford personally a true copy thereof, and at the same time showing him the original. That deponent personally knew the person so served to be Daniel Hungerford

Sworn to before me this

day of April, 19 66.

Notary Public

Figure 31. Eviction notice for Daniel Hungerford, May 14, 1966.

exclusive property of the City of Elmira.

The City Fathers say you failed to pay, $4,700 in back taxes.

And the eviction notice signed Thursday morning is to enable the city to demolish your home, one of 10 such properties in the city to be demolished under a new "anti-blight" ordinance passed by the City Council.

Corporation Council William Burns said today that all that is required is for the constable to tack the eviction notice to your screen door, but would rather have the notice served on you personally…if they can find you.

But don't feel that because there is a guard at the door to prevent you from going on the premises that the City is completely heartless. The constable waiting for you is authorized to offer you assistance in finding new living quarters.

You see Dan, your biggest "crime" wasn't so much neglecting to pay your taxes, but in reality, your "crime" has been being born ahead of your time.

You've more or less become a living legend in Chemung County.

At a time when people were debating the future of the then new "horseless carriage," you were pioneering in the field of aeronautics.

You collaborated in the building of one of the first airplanes in this part of the state, landing and taking off from the pasture beside your rambling home at 823 W. Second St.

And by the time people had accepted the automobile as being here to stay, and began to discuss the pros and cons of flight, you already had moved into the then unheard field of rocketry.

When people "oohed" and "aahed" at air shows when they saw your long, black, torpedo shaped "Rocket Car" roar down a runway with the rocket engines going full blast, you were calmly and logically discussing space travel.

Your "crime" of being ahead of your time extended into other areas, also. Changes you advocated years ago for government were considered far too radical, but now many of these changes have taken place.

How many times did you try, unsuccessfully, to win local or state political office on the American Labor ticket, and later on the Liberal Party platform?

Over the years, your research and inventing has kept you from realizing the change taking place in your own neighborhood. When you were a young man, your family home was isolated, almost in the country west of Elmira, and just within the City limits.

Thanks mainly to your efforts, the street was finally paved and new homes began to spring up around you; nice, comfortable, modern homes, peopled by persons who do not quire understand you Dan.

The accumulation of 80 years of notes, books, magazines, newspapers, inventions, etc. mean nothing to them, nor the city, although it is the perusal of this accumulation that keeps you active and still far ahead of your time.

So come back Dan. Let the constable do his unpleasant duty and go home.

And don't despair, over the years, you've also accumulated a lot of friends…not too influential maybe, but friends who are quietly working behind the scenes right now to prove the law which has taken your home from you is unconstitutional.[251]

Towner later wrote the author,

I ran at least two by-line stories on the front page with banner heds [sic] like "DAN HUNGERFORD, WHERE ARE YOU". . . . I also ran a story with pics when Dan finally surfaced and was lucky enough to be at his house with a photographer when three or four police cars swooped up with lights and sirens blazing and officers with guns surrounded the defenseless and bewildered old man. We ran pictures of him sitting dejectedly on a tree stump with his head resting on a cane while he watched the police board up all his windows and doors and padlocked everything, refusing him entrance to retrieve any of his invaluable papers and plans.

I later learned the reason behind the eviction. In the period since I had first met him, the area where he lived had grown from a rural to a suburban area with beautifully landscaped and expensive homes springing up all around the ramshackled Hungerford house. His new neighbors considered the house an eyesore and finally, his nearest neighbor, a city official who wanted the property in order to expand his own, had initiated the Writ of Eviction.[252]

The *Leader* for June 10, 1966, ran a headline reading "'80 Years Service And This Is My Reward" with a subordinate introduction above Towner's by-line noting, "4

Prowl Cars, Ambulance, Six Policemen Evict Dan Hungerford." The city of Elmira, according to the Towner piece, claimed it had had possession of the house since December 30, 1965, for non-payment of $4,237.89. On hand on West Second Street also was John L. Sherman, who had been "acting as Dan's agent in his recent struggles with the City of Elmira to prevent the carrying out of an eviction notice." The ambulance was available to Hungerford for a free ride to the county home in Breeseport, a service he declined and told Towner he likely would sleep in his car.

> A few minutes later, the bearded, homeless man, climbed wearily into his 1935 Buick, backed slowly out of the driveway and drove off…leaving his world behind.
>
> The workmen [boarding up the windows and doors] finished and the newsmen left. All that was left was one prowl car, stationed in front of the house. . .on guard against the return of the eighty-year-old evictee. [253]

Peg Gallagher wrote that someone had stolen a steam engine from Hungerford's front porch, provoking him to keep a loaded shotgun by his side. It was this fact that caused the police before eviction to warn "neighbors to stay away. But Hungerford left quietly."[254] One wonders if this engine might have been the model Hungerford built in his early years. A Hungerford relative noted, "Dan built when he was very young, still a boy I believe, it should be around somewhere. It was one of his very first inventions."[255] Certainly such a piece would have meant much to Hungerford and inspired him to protect his other possessions.

Jon Elan Steen wrote that "there was a social worker or someone connected with the city that had a lot of involvement with Dan at the end (got him out of the house and into a 'more suitable place'.) I think his name was Barr. . ."[256] Later, Elan Steen added, ' I had no occasion to see uncle Dan the last few years of his life and only casual chit chat about Mr. Barr came my way. Uncle Dan had been quite ill for a number of years, and it is reasonable that one or more of his neighbors called the Health Dept. to have him taken care of." [257]

Perhaps Elan Steen thought James E. Barr was a social worker involved with Hungerford. In August 1992 Barr noted he was employed from 1964 to 1991 by the county health department as director of environmental health, but he was not a social worker. "My factual recall of Hungerford Brothers is essentially nil. . . . Daniel or both brothers *may* have become reclusive and the home *may* have created public health problems thus the involvement of the Health Department. The underlining is to emphasize that this vague feeling is speculative."[258]

The *Elmira Star Gazette* for June 10, 1966 mentioned a different man named Barr, Hungerford's friend Russell Barr (1913–1980) of 315 E. Center Street,[259] who approached the Hungerford house after the eviction. Told by police officer Vincent Glynn that he was trespassing, Barr replied that he had power of attorney from Hungerford and that he, Barr, "was to see to Hungerford's well-being." Glynn told Barr he had no authority to "accept such papers" and advised him to go to police headquarters. The newspaper also noted that city manager Carl F. Sanford said the house had become city property some time back. "Hungerford disappeared for some time subsequent to that, and had gone to Pennsylvania, said Sanford." Of Barr, Hungerford said he was "HELL ON POLITICS—WAS A PROMOTER OF PARKING METERS—MET SO MUCH—MANY GRAFTERS IN PUBLIC OFFICE –HE WONT [SIC] EVEN VOTE. HE HAD TWENTY YEARS IN LOCAL POLITICS—AS WARD HEALER [sic]—-HE'S COMPLETELY DISGUSTED—AND WARNED ME—NOT TO INVOLVE HIM IN MY POLITICAL MOVES. BARR—IS A GOOD MAN."[260]

In addition to Russell Barr, John Sherman sought to assist Hungerford during the period of his eviction. Hungerford described the latter aide as a "6 foot 3 – former world war 2 –commando –chief says he had 800 men under him".[261] Hungerford also said Sherman was a writer. "AT PRESENT [January 1967] BOMBARDING U.THANT WITH ONE AND TWO MISSOLES [sic] A DAY." [262] Sherman did not drive in Elmira, but moved around the city on a pedal-powered tricycle. In June 1966, Sherman, on behalf of Hungerford, read Hungerford's statement to the city council claiming that the "invasion of my privacy and health was, and is, at least unconstitutional…." He demanded the "cessation of the attempted stealing" of his property.[263]

If there was a villain in Hungerford's eyes, it was "ATTY.W D. BURNS IS OUR CITY ATTY. LIVES SECOND HOUSE WEST OF MINE – A REPUBLICAN".[264]

After the eviction, Sherman and Barr provided assistance to Hungerford at a two-room apartment at 312 E. Third Street. Hungerford toward the end of 1966 said he was relying on a $54 monthly welfare check with his $50 rent paid in addition. Sherman, wrote Hungerford, "helps me every day helps me change the bandages on my arm and leg." He also went to the house on Second Street where he salvaged "Floyd's electric clock" and a set of musical bones, which, sadly Hungerford could no longer play "because of my arm."[265] Sekella called Sherman a "helpful friend" to Hungerford.[266]

Other Hungerford friends included the Sekella family. Even with Steven Sekella stationed in Germany, his parents gave Hungerford meals at their house and

delivered food to the East Third Street apartment. They consulted a lawyer to see if the Hungerford house could be reclaimed, but were told it was too late. Steven Sekella's wife, Jacki Lovell, also helped. According to Sekella, "You couldn't help but like the guy."[267]

Edwin French and Hungerford were long time friends who spoke often. George Mapes has observed that French and Hungerford "socialized occasionally with the conversation usually entwining socialist doctrines."[268] Hungerford wrote in a November 1948 letter to the *New York Times*, "I and a very close political friend of mine – one Edwin S. [sic] French – presented Mr. [Henry A.] Wallace's name before local Elmira, of the American Labor Party as one choice for standard bearer. . ."[269]

In an extensive, hand-written, sixteen-page letter to "Ed & Helen" (Erwin and Helen French) dated August 26, 1966, Hungerford explained his eviction as well as much of his family history. A January 1967 letter identified helpful witnesses including "Mr. & Mrs. Erwin D. French – 50 Union Street – Gloversville."[270]

Among the Hungerford papers is a note from "Ed" along with a draft of letter "to the Mayor, S. G. [*Star-Gazette*] and Telegram [*Sunday Telegram*]." The writer, one assumes Erwin French signing as Ed, said the eviction had reverberations beyond Elmira given Hungerford's prominence. The writer also added in his note that it was too bad that "Marshall Bush is not there and said

> I was not surprised, in fact, I warned Dan and his brother ten years ago. I said: "sell and get out of Elmira" I knew then that the (I call them) "Vultures" would, some day, came in and take all that they had. And it happened.
>
> Again, I say Dan should have paid his tax, but it seems, after his mother died, he neglected every thing – except his invention.[271]

Hungerford worked diligently but futilely at repossessing his house. At the Chemung County Fair in August 1966 he spoke with Governor Nelson Rockefeller, a conference documented by a photograph in the *Corning Leader*. Hungerford had sent Rockefeller a telegram declaring the governor the "Court of Last Resort". Rockefeller greeted Hungerford with, "Well, Mr. Hungerford, I understand you have a tough problem." The governor also noted, "I'm aware of your contributions in the fields of aviation, space and other fields." Rockefeller indicated there might be a solution in new state law giving tax relief to the elderly, and he asked his legal counsel, Robert Douglas, to investigate the eviction matter. Douglas subsequently spoke with the Elmira mayor, Howard H. Kimball, Jr. Later John Sherman, friend and advisor to Hungerford, said, "Dan really thinks there's a chance now. He's thrilled at the compassion shown one old man by the governor."[272]

Hungerford subsequently sent a letter to Rockefeller asking if there might be "some word you can give me concerning this problem?" Hungerford alluded to Rockefeller's offer to "take a good look at the conditions leading up to that Foreclosure…I am striving to clean the property up, even now, though the City Of [sic] Elmira claims title…."[273] In another letter, Hungerford suggested to Rockefeller that if the latter could not help him, then Hungerford's vote in the gubernatorial election might go to his opponent.[274] Hungerford subsequently noted that he had a letter from Alton G. Marshall, "executive officer to the governor", saying in "effect the gov. could do nothing for me—."[275]

In August 1966 Hungerford wrote to former Elmira mayor Edward A. Mooers, who had assisted him in the past, but Mooers replied to Hungerford that he was "skeptical" of any success in reclaiming the Second Street house.[276]

In January 1967 Hungerford wrote at Russell Barr's suggestion to Robert John McIntosh, a lawyer in Port Huron, regarding Hungerford legal problems "that possibly you or some one – you might suggest – might take my case." Hungerford said he planned a lawsuit against the Elmira Water Board and the city for an injury suffered while on the job there "several years ago – resulting in partial loss of my legs and right arm – osteomyelitis set in – I was in bed thru the winter of 1953–54…been on crutches ever since…the lawyers won't touch my case — fear of the politicians—the city is trying to get twelve to fourteen million dollars for urban renewel [sic]."[277] One might note that osteomyelitis, in fact, can follow physical injury to a bone.[278]

In August 1966 Hungerford wrote to friends that he was thinking of going to New York City because he had an "address of some Black Power (Negro) lawyers. . . may engage one to come to Elmira. That will put a different color on the subject [eviction]. [And] I'll sue the city for a quarter million dollars, result of an injury sustained while working for the Elmira Water Board Filter Plant 10 or 12 years ago. Partial loss of my right arm and left leg." [279]

Hungerford also wrote of his on-the-job injury in 1953 to Congressman Adam Clayton Powell. Hungerford said that he had been on crutches ever since the accident. Now he wanted to sue the city "FOR ENOUGH TO MAKE THE CASE WORTH WHILE. IN THE VICINITY OF TWO MILLION DOLLARS." From Powell, Hungerford sought "ATTORNEYS OF YOUR RACE AND CHOOSING, TO CONDUCT MY CASE AND WHO CAN FINANCE THEM SELVES. I WAS OBLIGED TO GO ON CH. [Chemung] CO. RELIEF LAST YEAR."[280]

Why Hungerford thought a black attorney would be superior to a white is not clear, but there was no doubt in his mind that he needed a black lawyer. In November 1966 he contacted Harry C. Bright in Winston-Salem, North Carolina, after receiving a Bright business card from a black photographer in Elmira. To Bright, Hungerford wrote, the Elmira politicians were so taken with the offer of federal urban renewal money that the local lawyers were "so cowed they dare not say their souls are their own. . . " Again Hungerford mentioned two million dollars, for "ANY THING LESS THAN EARTHQUAKE WONT [sic] BUDGE THIS COMMUNITY." He continued by saying that his claim was based on an informal contract he had before his injury to develop a tool for a wine company in Hammondsport. He worked at the invention again in the early 1960s until he had a "RELAPSE OF MY CONDITION". He calculated that when "PUT ON THE MARKET [the invention] IS WORTH, MILLIONS OF DOLLARS". Receiving no reply from Bright, Hungerford wrote again in February 1967, "WE DON'T CONSIDER SILENCE – A POLITE NEGATIVE—IN A MATTER OF SO GREAT IMPORTANCE . . ."[281]

In December 1966 Hungerford wrote to Thomas A. Banfield, Horseheads village manager, that "NO TOM-I CANT ADJUST TO MY PRESRENT SITUATION? I HAVE WORK TO DO AND ALL MY TOOLS, DRAWINGS, MATERIALS, ARE SEALED AWAY FROM ME IN OUR OLD HOMESTEAD. . . .RUSS. BARR AND JOHN SHERMAN, ARE HELPING US GET BACK. . . THE HOUSE IS STILL STANDING. CREDIT, BARR AND SHERMAN."[282]

I thought for many years that almost all of the Hungerford material record was lost with the demolition of the house on West Second Street. However, it appears that some materials were salvaged. H. Steven Sekella recalled a truck at the house almost every day after the eviction. Hungerford wrote to Emory Botsford, "Barr. [sic] Is working at 823 W. 2nd. Putting the stuff in boxes and arranging same so we can get to the things as we need them, or have to move them quick. I don't as rule admit the latter. It induces negative suggestion. I have and intend to emphasize the positive. That gives me fighting strength."[283] Hungerford also noted elsewhere that "John Sherman has a key" to the house.[284] Linda Hungerford Lathrop, William Hungerford's granddaughter, has noted that for a time after his eviction, Hungerford lived in a "utility apartment attached to our home in Jobs Corners" (Pennsylvania). "This is probably why we had many of his photos, etc." She added that her father, Arthur R. Hungerford, and his sister, Vivian H. Wells, "had many of photos and other items stowed away."[285]

Jon Elan Steen noted that other Hungerford family members had not responded to his request for information about the rocket car and its builders. "My mother's brothers and sisters. . . .rather resented the way the city ransacked the house and then demolished it. . . .I suspect my one aunt and uncle were willing to pay the back taxes and I suspect they wanted to renovate the house and keep it in the family. . . .My mother never got anything out of the whole deal, well $40 or so I guess. My grandfather [William Hungerford] owned as much of that house as any of the others, and he paid the taxes for quite a number of years, even though he did not live there." Steen added, ". . . my father [Steven Viele] was always helping with money, etc. The stories in the news media made the family out to be. . . .[sic] what ever. Uncle Dan was stubborn but not forsaken by the family."[286]

In 1994 Tom Page quoted Cliff Towner in the *Star-Gazette*, "The last time I saw Dan was on the lower Eastside of Elmira where he was living in a single room in a tenement building and looked like the walking dead. He died shortly after that. It was a helluva way for Elmira to treat one of its own."[287]

In April 1967 Hungerford was a patient in the Arnot-Ogden Hospital. Sekella, on leave in Elmira, explained hospital administration that "Dan had no family who would visit." So Sekella chatted with Hungerford on April 8; Hungerford died the next day.[288]

Daniel and Floyd Hungerford were buried in unmarked graves at Woodlawn Cemetery in Elmira. The Hungerford ten by twelve foot plot had been purchased for $105 by Jennie H. Badger, when their mother Mary Hungerford died in 1944.[289]

In 2005 Sekella, who remained loyal and generous, arranged for a monument marking the Hungerford brothers' final resting places.[290] Interestingly, the inscription includes the title of Marvin's seminal article, "The Wizards of West Second Street" as well as a reference to the *Automobile Quarterly* volume, including page number, so that cemetery passers-by can find the explanation for the "Wizards" reference.[291]

PRESERVATION OF THE ROCKET CAR AND OTHER HUNGERFORD ARTIFACTS

In 1980, after Hodge's death, I learned of the rocket car in the Capital District of New York. I arranged to borrow the vehicle from Daniel Dwyer for a State Museum exhibit of various power sources such as electric motors and steam engines. On a short loan basis then, Shirley Lois "The Moon Girl" made its first appearance at the Museum.

In 1985 Marvin spotted the car outside a garage in Menands. He wrote to Dwyer to ask about the vehicle,

Figure 32. In 2005 H. Steven Sekella purchased a monument for the previously unmarked Daniel and Floyd Hungerford graves at Woodlawn Cemetery in Elmira. On the stone the birthdates have been reversed. "Wizards of West Second Street" identifies Keith Marvin's 1965 *Automobile Quarterly* article.

and Dwyer answered that the car "is presently owned by me and Roger Hodge [Ralph's son], although Roger apparently has fallen on hard times and I have not heard from him recently."

> The Car was stored at Menands Auto Sales and the place was rented by the owner and the car was moved outside by the lessees without my knowledge. The Car now has been removed and is presently located in a garage in the City of Watervliet. I would be interested in talking to you concerning the Car and its possibilities.[292]

Dwyer wrote in 1992,

> The rocket car was turned over to Ralph Hodge in 1965. I was with Ralph when this transaction occurred. Dan Hungerford, at that time, was receiving public assistance. Ralph Hodge transported the car from Elmira to Cohoes, New York, where it was refurbished from an extremely deteriorated condition. Ralph, over the years, had the car appear in various exhibitions in this area. I was responsible for all legal work and promotions.
>
> Ralph passed away in 1979 and I took control of the car and from 1979 to date, I have placed it with various groups for display including a parade in Troy, New York and on display at a car dealership, Charlie Sirigiano's.
>
> For the last few years, it has been housed in a garage in Watervliet, New York.[293]

Dwyer kept the car until presenting it in 1992, shortly before his own death, to the State Museum.[294]

In 2004 Marvin donated to the State Museum Hungerford ephemera he had received decades earlier. These included the rocket-powered soldering iron, photographs, miscellaneous printed material and letters from Hungerford to Marvin.

The Glenn H. Curtiss Museum in Hammondsport, as mentioned above, has three Hungerford-built aircraft engines, a Curtiss JN-4D airplane, a Curtiss Oriole airplane, "a fuselage for another Curtiss JN and a Curtiss OX-5 engine used by Dan."[295] The Curtiss Museum also has two pieces of the original body cover for the rocket car with Shirley Lois "The Moon Girl" inscriptions on them. Correspondence between Otto P. Kohl, curator at the Curtiss Museum and John L. Sherman on Daniel Hungerford's behalf in 1966 mention $1,500 had been paid for an initial lot of materials; one assumes the aircraft engines and other objects in 1961. In the summer of 1966, negotiations were under way for a second lot of artifacts, for which Hungerford asked $520 and Kohl offered $250–$300. Sherman responded that

> I have personally received an offer, by a locally interested group of citizens who may carefully consider the purchase of all of Dan's historical things, his home, and land, with the avowed intent of establishing a museum right there. Of course I am insisting that Dan be provided living space on the premises, with duties only of studying, drawing, and talking about the things of science and other skills which he can make so interesting. Perhaps, and I only say perhaps, because I do not know of any other proposed plans of your group, this information may be of some value to you. Dan would fit in very well in those proper surroundings.[296]

Stationed in Germany, Sekella, too, had been concerned about the Hungerfords' material legacy. He wrote to Daniel Hungerford in an undated letter

> When we were last together we talked about the unpleasant subject of what might happen to your experiments, notes and ideas in event some misfortune should befall you. I hope you have taken steps to prevent the loss of these things, especially the project we discussed [probably the electro-magnetic space drive]. I have heard that you found your model and that it poses many interesting possibilities. I wish now we both could explore these possibilities and hope we can eventually do so in the near future. Yet I worry that it may be lost or destroyed by some unknowing person if something happens to you. I wish I could see you & the model. Oh well by 17 months my curiosity will only make it a greater event.[297]

Cleoral Lovell, Sekella's mother-in-law noted in late 1967 that his,

> young son-in-law was one of his protégés during the last few years of his life. Because of son-in-law's mechanical talent, Dan took him under his wing. He even sold him some of his treasured old cars and engines, permitting him to work out part of the sale price in re-roofing the building in which they were stored.[298]

Among the items received by Sekella include a race car utilizing a Henderson motorcycle engine, a Henderson engine modified for use an airplane, a 1935 Plymouth automobile, a 1934 Terraplane automobile, and a shotgun. Receipts received by payments from (then wife) Jacki Sekella, while Steven was in Germany. Totals reached $270 July 1964 through March 1965 for "cars & parts", including "Henderson racecar" and "1934 Terraplane sedan". In 2009, Sekella retained the Henderson and Plymouth cars as well as a Henderson engine.[299]

REMEMBERING DANIEL AND FLOYD HUNGERFORD

In 1965 Marvin thought the "tragedy of the Hungerford dream was the fact that a public only too eager to follow land rocketry and interplanetary travel in comic strips and over the airwaves was not yet ready to accept it as a reality." But Daniel Hungerford, then a "handsome seventy-nine–year-old gentleman with bright eyes and a black beard, sits in the house on West Second Street reading profusely, keeping a watchful eye on the progress of satellites and other guided missiles, harboring no regret that he had been one of the unsung pioneers in the field of rocketry."[300]

Recalling her father and uncle, Shirley Hyde wrote

> Dan and Floyd were maligned and endured ridicule from others who, in retrospect, were "pretty small potatoes" in the scheme of things as they are today. When the first walk on the moon occurred, I had a phone call from a friend in Houston who felt compelled to tell me what a pity it was that Dan could not have lived to see his dreams come true.[301]

The *Elmira Star-Gazette* reported Daniel Hungerford death after a week's hospitalization. The newspaper also commented that Daniel and Floyd had purchased their first airplane for $200 before rebuilding it. "In 1929 they built a rocket car which Hungerford claimed would go 70 miles per hour on a good road. The biggest problem, the inventor once said, was that it took a gallon of regular gasoline to go two miles. . . [Daniel] Hungerford also was interested in astronomy. In the 1930s he lectured to science groups at Elmira College and Cornell University and other institutions. He believed then in space travel then, but was looked on as a dreamer."[302]

Jon Elan Steen wrote about Daniel Hungerford's later years

> Quite eccentric. . .and most people considered him to be just a little bit crazy. I can remember the old car that he drove, and the back seat was loaded with the daily news papers clear to the roof. Solid newspapers door to door. The house was almost as bad, except the papers only went up about 4 or 5 feet deep and there were paths here and there about the house. . . .I do know there was a stack of uncle Dan's correspondence and notes in the House. However as far as I know they were bulldozed in with the house after Uncle Dan's death. I saw some of the letters he had received from various people all around the world. It was a shame, because I suspect some of the letters had come from very prominent people interested in jets and rock-

> ets etc. and other areas of aeronautics. He may have been acquainted with Glen [sic] Curtis [sic] although I could not say for sure. The city of Elmira condemned the house and it was demolished about 20 years ago, and as far as I know what ever notes he may have had made or theories he may have developed were in that house. . . .I doubt the city of Elmira made any effort to sort through any of the contents.[303]

While the Hungerfords died in poverty, they did not pass unknown in Elmira or among historians elsewhere. Erwin French, Daniel Hungerford's friend, forwarded a letter, probably to the *Star-Gazette*, from Paul E. Garber, senior curator and historian at the Smithsonian Institution. According to French, Garber noted the "learning of the death of Dan Hungerford" and remembered "his visit with you to the museum sixteen years ago" (ca. 1951). Garber said

> Dan Hungerford has not been forgotten by this museum. We have had a file folder with his name upon it in our biographical section for a number of years, but I do not regret that. . . .his story and accomplishments are not completely described in our file.
>
> Will you help me make it? Are there members of his family from whom we might. . .his biographical record of his accomplishments in aero. . . ? Would they have records that would augment our files?

French added his own comment:

> Thus it can be seen that only a few months after his death, historians in the field of aeronautics are at work. This will undoubtedly go on. Then when one picks up an encyclopedia . . . , he will find the names of Dan and Floyd Hunderford [sic], Elmira, N.Y.
>
> They help to achieve this goal would, I am certain, be appreciated by Mr. Garber to whom it will forward information.[304]

French wrote to Garber on December 30, 1967 responding to Garber's letter of August 29, 1967. With a few clips, French said little more information "about my good friend, Dan Hungerford." While there were no additions from those "who might have information as to his life history" who knew about Hungerford, French added,

> Dan was an odd person; had a philosophy that death would never come to him and any one who approached him upon the subject was due for a lecture. And, except for his brother Floyd, he was never close to the family. I do not think any of his nephews know any more of his history than I.
>
> I give you a few facts as I know them He was born in Pine City, [sic] just outside Elmira; attended rural school; moved to Elmira after his father died; learned the machinist trade; about 1912 built a garage, employing twelve men. At one time was very active in aviation. He built the first airport in Chemung County and it was he, who conceived the idea (now Harris Hill) as a potential airport, however, his plan never materialized, but eventually become the "Glider Capital". Always independent, he never worked for any company after he left the shop where he learned his trade.
>
> While the Rocket Car was his greatest achievement, he was always at work on other inventions. In 1910, the electric-controled [sic] thermostat to be used on coal burning furnaces. Then the combination brake pedal-gas and brake on one unit. This he used on his own car, traveling to Rochester, Buffalo, etc. Auto mfg. not interested. His more recent work was in developing a stapler, used for tying of grape vines.
>
> Dan's knowledge of machinery was known far and wide – working on surveyor instruments to the huge cutting knives on junk yards.
>
> While all the above has no bearing upon aeronautics, never the less it does show his active life. . . .
>
> I mighty add, before closing, that he donated many items to the Curtiss Museum at Hammondsport.[305]

Emory L. Johnson of Horseheads in 1967 wrote he had been a Hungerford friend and he had "entrusted some photos, just before he [Hungerford] passed away." In addition, Johnson said he "would like very much to have Dan be recognized for his contributions to science. He was a great man, warm and sincere."[306]

In response to a Hungerford article he had seen in the Australian *Restored Cars* magazine, Thomas Jack Carpenter of Big Flats wrote of visiting the Hungerford brothers in 1960.

> They lived in a two story ramshackle old house in [a] neighborhood of nice homes. The front yard was grown up with weeds and there were several cars from the 1930s in various states of disrepair. A knock on the door was answered by one of the brothers who introduced me to the other. They were in their seventies and Dan had a scraggly beard.
>
> As I recall, Dan had been married. Floyd was a bachelor but they now lived there alone. I told them what I wanted [an antique car to restore] and the[y] said the cars were for sale (I later learned the city authorities were after them for back taxes).

They did not have any early cars which was my main interest. Dan did most of the talking and told me they did not have much interest in cars but were mainly interested in airplanes and rockets. Cal Rodgers piloted the first airplane across America in 1912 in flights of 50 to 100 miles a day. He landed in a field across from Hungerford's [sic] house and they worked on his airplane.

Over the years the Hungerfords had made the acquaintance of many, if not all, of the early pioneers of flight. In the 1960s many of these people occupied high level positions in the US Air Force and The National Air and Space Agency. The Hungerfords were corresponding regularly with these people giving them their ideas on space related problems. Dan showed me a drawing he had sent to a high level general of his approach to the problem of re-entry of a space vehicle into the atmosphere. His approach used sapphire (which has a high melting point) to combat the high temperatures the nose cone is subjected to on re-entry.

There were technical journals and magazines stacked from floor to ceiling and on all the flat surfaces in the house. There was literally a path through these to go through the house. On my many visits I learned not to go in the house on a cold day when they had the heat on-it was what we would call stout. I told a couple of my flea market friends about the Hungerfords and they bought 3 trailer loads of parts and literature from them. They told me that the upstairs was also stacked full of magazines and there was an inch of dust in the bathtub!

Out back of the house was a small machine shop/garage. The individual tools were powered from overhead pulleys with belts. There were no cars but a 4 cylinder Henderson Motorcycle and a complete World War I Curtiss Jenny airplane. I was raising a family and building a house so did not have any money available to buy any of the items. In retrospect, I should have mortgaged the house and bought it all. The airplane subsequently went to the Curtiss Museum in Hammondsport, NY where it is currently on display. Their [Hungerford] rotating aero engine. . .is also on display there.

My involvement with the brothers ended with my transfer to California in 1964. When I returned a few years later, the brothers had passed on and their property had been auctioned off for taxes. A modern house now stands on the site. The Rocket Car was on display for period of time at a museum in Elmira, a couple of years ago.

To say the least, they were an interesting pair and were certainly ahead of their time. It was impressive what they had learned thru self education.[307]

Carpenter followed that letter with another to the author of the article, Igor Spajic, in which Carpenter said on a recent visit to the Curtiss Museum he had noted an OX-5 (Jenny) motor credited to a Hungerford brothers donation. Carpenter also noted that the friend who had told me about the Hungerford cache of old stuff said that in 1957, "there was a knock at the door one nite. . . and upon answering he found Dan there. He had come over to tell my friend that he could see Sputnik which showed up by reflected light against the dark sky."[308]

Eva C. Taylor, in the December 1974 *Chemung Historical Journal*, said Daniel Hungerford, the leader of the two-brother team, was "passionately interested in the subject of rocketry." Taylor noted that "In most of Dan's projects he was helped by his brother Floyd, but Dan was the leader and the spokesman, and got all the publicity – both credit and blame as the case might be."

Hungerford was "a facile speaker and used words and concepts that many people of his time thought belonged only to science fiction." In lectures at Elmira College and Cornell University, there were "no doubt . . . both skeptics and believers in his audiences."

In Elmira Dan was the most controversial figure of his time. Some people called him a crackpot, others thought of him as a scientist, still others called him a genius. He was often dismissed as a dreamer but no one could call him idle as dreamers sometimes are.[309]

A sincere and wised appreciation of Daniel Hungerford from the *Elmira Star-Gazette* in 1967 concluded,

As a young man he read deeply of socialism and it was his philosophy through life.

Many of the ideas he espoused – to the amusement of some with whom he discussed them – have become permanent fixtures in the American system.

Dan Hungerford was the mildest, most reasonable of men. He never argued, never lost his temper with those who disagreed with him, never closed his ears to their views. Sometimes these views were unflattering. That didn't ruffle Dan – at least he never took offense. He never uttered an angry word or vulgar one.

It was sad to see him age and grow crippled, eventually to depend on crutches to get around.

It was sad to see him lose his home because he couldn't pay the taxes.

And it's sad to realize that he often saw possibilities in ideas that others couldn't see. And because they couldn't, they were not content to regard him as a dreamer (which he was) but belittle him – which he didn't deserve.[310]

ENDNOTES

[223] Daniel D. Hungerford to William E. Dion, August 31, 1961.

[224] Keith Marvin, b.1924-2009.

[225] *Times Union* (Albany), June 24, 2009; *Old Cars Weekly*, August 8, 2009.

[226] Interestingly, it appears that Marvin planned to share his payment for the "Wizards" article. He wrote to Hungerford on July 12, 1964, "Always remember, although (and we'll presume the magazine will accept 'THE WIZARDS…") as we both need the money, my basic precept in this article is to put the great man in the place I've felt he belongs, since I first met him. Therefore, do please feel free to make any suggestions and I'll take if from there when I re-write…."

[227] Daniel D. Hungerford to Keith Marvin, May 18, 1964. Harry W. Bull [sic] "gained international attention in the spring of 1930 by his experiments with a rocket sled." He used Syracuse University facilities to experiment with liquid fuels, according to Charles G. Philp, *Stratosphere and Rocket Flight* (London, 1935), p.5. The father, Horace P. Bull (1878?-1945), was managing editor of the *Post-Standard*.

[228] Keith Marvin, "Unique Rocket Car Will Be Shown At Arsenal Show", (Troy) *Times Record*, undated (1965) newspaper clipping.

[229] See 1930 federal census and various city directories.

[230] Jim Dix, "Follow Up on the Rocket Car", *Klaxon*, February 1980.

[231] Marvin, "Misguided Missile".

[232] *Old Cars Weekly News & Marketplace*, July 21, 1994. H. Steven Sekella in a telephone conversation with the author on November 3, 2008, said there was no shotgun as alleged in newspaper stories. The firearms Daniel Hungerford had in his house were an "old" .22 octagon-barrel rifle (probably a Winchester) and an "old" single-shot Stevens .22. These were the "notorious guns" confiscated by the Elmira police. Sekella added that he and Hungerford subsequently retrieved the arms. Sekella noted, also, that he fired the Stevens once which blew back, hitting him in the head.

[233] Daniel D. Hungerford to Keith Marvin, May 20, 1964.

[234] Daniel D. Hungerford to Keith Marvin, May 29, 1964.

[235] Keith Marvin to Daniel D. Hungerford, May 19, 1964.

[236] Daniel D. Hungerford to Keith Marvin , May 22, 1964.

[237] Keith Marvin to Daniel D. Hungerford, June 3, 1964. On May 29, Marvin wrote, "As far as the possibility of exhibiting the car at Big Flats goes, I would like to discuss this with you before you make any commitment….I am thinking of other possibilities by which more money might be realized than simply exhibiting the car for firemen's affair. I think the less said the better until I can talk with you…."

[238] Keith Marvin to Daniel D. Hungerford, July 12, 1964.

[239] August 3, 1964.

[240] Geoffrey N. Stein recalled Keith Marvin mentioning $10,000 in an undated conversation.

[241] Daniel D. Hungerford to Keith Marvin, June 25, 1964.

[242] Hungerford to Marvin, August 28, 1964. The present author is not familiar with "Miss Yerman." Perhaps Hungerford had Yevon Spiegelberg in mind.

[243] Actually the car was shown at the Arsenal on May 15, 1965. It appears (see above) that Daniel Hungerford saw the car one more time on a trip east he made in 1966.

[244] Daniel D. Hungerford to J. E. Botsford, October 25, 1966. Only the first page of a copied letter is available to the author.

[245] Daniel D. Hungerford to Henry G. Budd, September 28, 1966.

[246] Daniel D. Hungerford to H. Steven Sekella, October 2, 1966.

[247] Richard M. Schaeffer by telephone to Geoffrey Stein, August 31, 2009. Schaeffer, who as a child (born 1939) lived at Edgewood Drive, remembers the flight of the horse, his mother telling him to stay away from the "crazy" Hungerfords, and his sneaked trips to the West Second Street property.

[248] James V. Eichorn Email to Geoffrey N. Stein, September 16, 2009.

[249] Undated clip probably from the *Star-Gazette*. If Hungerford calculated from the year he and his family moved to the Second Street house, 1911, the letter would date from 1959.

[250] Daniel D. Hungerford to "Ed & Helen" (Erwin D. and Helen French), August 26, 1966. Earlier in his letter, Hungerford noted that "Fulkerson – and a man used to be deputy sherrif [sic] in Pennsylvania – knows more about …constitutional rights then the men that wrote them came in just in time to screw the works by helping the welfare –with his testimony…."

[251] May 27, 1966

[252] Cliff R. Towner to Geoffrey N. Stein, November 22, 1994.

[253] Hungerford wrote to his friend H. Steven Sekella, October 2, 1966, "they were going to take me to the county house at Breeseport, NY before this a couple weeks they came for me – I got into old Pont. [Pontiac] and drove – to Pennsylvania…left them standing twiddling their thumbs and looking – a Friend of mine He was there and told me about it when I came back."

[254] Peg Gallagher, "Moonstruck", *New York Alive*, March/April 1986, p. 52.

[255] The author notes, July 25, 1980, three borrowed photographs included "Dan Hungerford with a steam engine model and two boys". While the author understood the photos were borrowed by John and Joan Schatz, Joan Hungerford Schatz said in the early 2009, "not Joan, perhaps Linda Lathrop? I don't recall ever having known this information that you credit me with."

[256] Jon Elan Steen to Geoffrey N. Stein, July 30, 1992.

[257] Jon Elan Steen to Geoffrey N. Stein, August 14, 1992.

[258] Jim [sic] Barr, to Geoffrey N. Stein, undated (August 1992),

[259] Russell Barr appears in the 1936 city directory as a Thatcher [glass] Manufacturing Company employee residing on Grand Central Avenue. In 1949 he was an employee of the Dual Parking Meter Company. An obituary in the *Star Gazette* reported, for June 16, 1980, that Barr had "formerly owned and operated Barr Sales and Service." H. Steven Sekella told the author Barr was "a character". He had a "lot of stuff" outside his house as did the Hungerfords, but it was "not as good".

[260] Daniel D. Hungerford to Robert John McIntosh, January 5, 1967.

[261] Daniel D. Hungerford to Harry Steven Sekella, October 2, 1966.

[262] Daniel D. Hungerford to Robert John McIntosh, January 5, 1967.

[263] Quoted in the *Leader*, June 8, 1966.

[264] Daniel D. Hungerford to Robert John McIntosh, January 5, 1967.

[265] Daniel D. Hungerford to "Ed & Helen", August 26, 1966.

[266] H. Steven Sekella in telephone conversation with the author, November 3, 2008. Sekella added that all of the Hungerford brothers' friends were serious about their endeavors as well as loyal. There were "no crackpots in the bunch."

[267] H. Steven Sekella in telephone conversation with the author, November 3, 2008. Sekella noted also that Daniel Hungerford liked lemon sodas from the Dairy Queen drive-in restaurant on Lake Street and hot dogs from the M&M restaurant on Baldwin Street.

[268] George Mapes to Geoffrey Stein, October 25, 2009. Mapes added French was a encyclopedia salesman. "I lost contact with the French family around 1945/6."

[269] Daniel D. Hungerford to the *New York Times*, November 7, 1948.

[270] The recipient was Robert John McIntosh of Port Huron, Michigan.

[271] One assumes this was Marshall Bush, the former Socialist Party colleague. In January 1967, Hungerford noted "Mr. & Mrs. E. Marshall Bush" lived at 16 Cornell Avenue in Lancaster, Pennsylvania.

[272] *Leader*, August 17, 1966.

[273] October 20, 1966. Hungerford's typed letter is in lower case font (unlike most Hungerford's all-capitalized letters). This letter was noted by Hungerford in pen "My Copy by John Sherman".

[274] The letter is dated October 18, 1966. In the text, Hungerford notes, "Several weeks ago a member of our city council called on me and wanted to know if I had received a letter relative [to] our talk at Chemung County Fair last August [.] I told him no [.] He said a letter from you arrived at the council. Said letter…apparently was suppressed. Our local press has remained silent on all my problems. Why? The Corning, N.Y. Leader has given me good coverage all thru my troubles. For whom Governor Rockefeller do you recomend [sic] I cast my ballot on Nov. 8 [sic] I have but one."

[275] Daniel D. Hungerford to Robert John McIntosh, January 5, 1967.

[276] Daniel D. Hungerford to "Ed & Helen", August 26, 1966. The author has access only to an incomplete copy of this letter. The pages present give no definite information about anything Mooers might have offered to do.

[277] Daniel D. Hungerford to Robert John McIntosh, January 5, 1967. Several pages of names and addresses are appended to the letter apparently as character references. Among them are a reference to the author, to wit: "Mr. & Mrs. Aaron Stein & Sons – 426 W 1st St. Elmira, N.Y." The author's father, Aaron, was in the scrap metal business in Elmira. Daniel Hungerford, his brother Floyd and their acquaintances frequented the scrap yard. The names of other scrap dealers also are found on the list.

In 1958, Daniel Hungerford was involved as a passenger in an automobile at Endwell. He "complained of pains in the back and left leg but that neither [injured individuals] required immediate medical attention." The driver of the car in which Hungerford sat was William Ward, age 41, of Elmira. See the *Binghamton Press*, April 22, 1958.

[278] For a description of the pathology of osteomyelitis see *emedicine.com/emerg/topic 349*.

[279] Daniel D. Hungerford to "Ed & Helen", August 26, 1966.

[280] October 19, 1966.

[281] Daniel D. Hungeford to Harry O. Bright, November 7, 1966 and February 7, 1967. Bright also was the surname of several Elmirans in the 1960s; perhaps there was a connection to Harry Bright in North Carolina.

[282] Daniel D. Hungerford to Thomas A. Banfield, December 9, 1966. The capitalization is in the original. As explanation of the "our" and "us" pronouns, Hungerford wrote, "MARVIN, IN HIS STORY SAID – I ABSORBED, MY LATE BROTHER FLOYD S. SPIRIT, SO I HAVE BEEN GOING ALONG WITH THE THEORY, HENCE THE WE—-."

[283] Daniel D. Hungerford to J. E. Botsford, October 23, 1966.

[284] Daniel D. Hungerford to H. Steven Sekella, October 2, 1966.

[285] Linda Lathrop to Geoffrey Stein via email, September 29, 2008.

[286] Jon Elan Steen to Geoffrey Stein, August 24, 1992.

[287] September 11, 1994. Peg Gallagher, writing in the Elmira *Sunday Telegram*, February 3, 1980, reported that at his death, Hungerford's home was 312 E. Third Street.

[288] H. Steven Sekella to Geoffrey Stein via telephone, September 25, 2008.

[289] Woodlawn Cemetery records, Elmira, New York.

[290] Sekella by telephone to Geoffrey Stein, September 2008.

[291] The contract between Sekella and the George E. Hoare Memorial Company, Inc., called for a Barre gray granite block with a polished face. The cost was $1,183. It should be noted that on the stone, the birthdates for the brothers are reversed, i.e., Floyd is shown to be the older while, of course, he was two years younger than Daniel.

[292] Daniel S. Dwyer to Keith Marvin, August 26, 1985.

[293] Daniel S. Dwyer to Geoffrey N. Stein, May 26, 1992.

[294] Keith Marvin in a telephone conversation with the author, April 5, 1994, said he and Hodge were co-owners of the rocket car. Hodge wanted to sell. Marvin had Harrah interested, but the latter died before a deal could be consummated.

[295] Merrill Stickler to Geoffrey N. Stein, March 30, 1979.

[296] John L. Sherman to Otto P. Kohl, August 9, 1966. Interestingly, Steven Sekella referred in letters to Daniel Hungerford to the "Hungerford Museum". In one undated note (probably from 1965) he said that when he returned to Elmira from military service in Germany, "I hope to find the Hungerford museum intact." Also he had run "across some old bayonets and daggers of the Nazi period for the Sekella Museum. I guess I'll pick up where the Hungerford Museum left off." In another letter, Sekella asked, "Did you ever get that Winchester you wanted $50oo back. If you do, I want to get it from you."

[297] Sekella's reference to seventeen months until he would be home "sometime in the summer of 1966" suggests the letter was written at the end of 1964 or beginning of 1965.

[298] Cleoral Lovell to Paul Edward Garber, November 10, 1967.

[299] After he went into the army in 1963, his parents junked the car, which was in poor condition, Sekella tells the author.

[300] Marvin, "The Wizards of West Second Street".

[301] Shirley H. Hyde to Geoffrey Stein, September 9, 1992.

[302] "Hungerford Dies; Designed Rocket Car," April 10, 1967.

[303] Jon Elan Steen to Geoffrey Stein, July 30, 1992. On July 7, 1992, Elan Steen wrote, "In my mind I can still see the bundles of letters and notes that were piled in that upstairs bedroom. It really would have been interesting to have sorted thru them…"

[304] E. D. French, probably *Star-Gazette*, 1967

[305] Erwin D. French to Paul Edward Garber, December 30, 1967. French noted, "Also, that after 77 years in N.Y[.] State, I am now living in Mass."

[306] Emory L. Johnson to Paul Garber, October 2, 1967.

[307] T.J. Carpenter to *Restored Cars Magazine*, March 7, 2000.

[308] T. J. Carpenter to Igor Spajic, May 16, 2000.

[309] "Hungerford's Rockets", vol. 20, no. 2, p. 2444.

[310] "Man with Spark of Near-Genius", *Star Gazette*, April 12, 1967

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Gallagher, Peg, "Moonstruck", *New York Alive*, March/April 1986

Hendy, Jerry, 'Elmira's Rocket Car", *Klaxon*, February 1980.

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Marvin, Keith, "The Wizards of West Second Street", *Automobile Quarterly*, Fall 1965. The New York State Museum has a copy of the more extensive draft of Marvin's original story.

Marvin, Keith, "Misguided Missile", *Special Interest Autos*, February 1980.

Marvin, Keith, "Museum displays unique Hungerford rocket car", *Old Cars Weekly News & Marketplace*, July 21, 1994. Marvin concluded his article by noting his plan to donate his Hungerford file to the State Museum and wrote, "with the car itself on one hand [in the Museum] and its history and related material on the other [his possession], one is of minor importance in automotive history without the other." Happily, Marvin did give the Museum his Hungerford materials.

Marvin, Keith, "Unique Rocket Car Will Be Exhibited At Arsenal Show", *Times Record*, *The*, [Troy, N.Y.], February 22, 1965.

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Unknown. H. Steven Sekella recalls a pamphlet or book about the Hungerford brothers and their rocket car. Daniel Hungerford lent this to Sekella's mother at one time; it was returned. Sekella in telephone conversation with Geoffrey Stein, November 3, 2008, said he doesn't know who wrote the work or how extensive it is "or anything". One wonders if this might be the piece Hungerford recalls having been written by Horace P. Bull of the Syracuse *Post-Standard*.

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