Descriptive Finding Guide for the Roland A. Boucher Personal Papers
SDASM.SC.10020

Finding aid prepared by Alan Renga
San Diego Air and Space Museum Library and Archives
2001 Pan American Plaza, Balboa Park
San Diego, CA, 92101
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10/16/2014
Title: Roland A. Boucher Personal Papers
Identifier/Call Number: SDASM.SC.10020
Contributing Institution: San Diego Air and Space Museum Library and Archives
Language of Material: English
Physical Description: 0.36 Cubic feet1 Box, 12” x 5” x 10.5”
Date (inclusive): 1932-2014
Abstract: Roland A. Boucher, engineer and inventor who founded AstroFlights, which worked with electric-powered radio controlled aircraft and developed the world’s first solar-powered aircraft. This is a collection pertaining photographs, slides, measurements, correspondence, articles on AstroFlight, Hughes Aircraft solar aircraft transparencies, two notebooks with technical notes, and a biography pertaining to Roland A. Boucher, inventor of the R/C car, the first air mobile satellite television transmission station, and the first solar-powered airplane.
Related Archival Materials note
Located in the SDASM library are books pertaining to major topics covered in this collection. They include:
Images from this collection have been digitized and placed on Flickr.
Conditions Governing Access note
The collection is open to researchers by appointment.
Conditions Governing Use note
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Preferred Citation note
[Item], [Filing Unit], [Series Title], [Subgroups], [Record Group Title and Number], [Repository “San Diego Air & Space Museum Library & Archives”]
Immediate Source of Acquisition note
The materials in this Collection were donated to the San Diego Air and Space Museum. The collection has been fully processed and is open for research with no restrictions.
Biographical/Historical note
Roland A. Boucher, engineer and inventor who founded AstroFlights, which worked with electric-powered radio controlled aircraft and developed the world's first solar-powered aircraft.
Roland A. Boucher (1932 - ) was born July 12, 1932 in Windham County, Connecticut. He attended the University of Connecticut and graduated with a Bachelor’s of Science, Electrical Engineering with distinctive honors in 1954, and also attended Yale University, graduating with a Master’s of Science in Engineering in 1955.
When he graduated from Yale University, Boucher joined the Hughes Aircraft Corporation of Culver City, CA. He was assigned to coordinate the test and evaluation of the avionics equipment used on the F-106 first line fighter aircraft then in production. At the time, the reliability of the first two squadrons was so poor that deployment to active military bases was in doubt. Boucher was put in charge of a task force of engineers and technicians assigned to triple the in-flight time of the squadrons. Within ten years he rose to the position of Engineering Manager and was involved in the design of satellites for communications and navigation, during which time he developed an improved satellite camera for meteorological photographs. He then conceived, developed, and demonstrated the feasibility of satellite to aircraft communications at VHF frequencies. In 1968 Boucher developed the first air mobile satellite television transmission station, used in Columbia during the 1968 visit of Pope Paul VI and later in China during the 1972 Nixon Presidential visit.
He left employment with Hughes Aircraft Company in 1973 to form a company - Astro Flights, a manufacturer of products for electric-powered radio controlled aircraft, unmanned aerial vehicles, brushless industrial motors, the world's first solar-powered aircraft and the world's first practical electric radio controlled model airplane. He conceived and designed the vehicle, which demonstrated the basic design feasibility in twenty-eight flights to five figure altitudes. All flights were powered solely by incident sunlight on the flying surfaces.
Astro Flight was awarded an DARPA contract through Lockheed in 1974 in order to build the Sunrise, the world's first solar-powered airplane. The historic flight, powered only by sunlight, took place November 4, 1974 at Fort Irwin, California. Two Astro Flight Astro 40 ferrite motors powered the craft via a 6:1 gearbox swinging a 36x24 wood propeller. More than one thousand solar cells on the wing were the sole source of energy, producing roughly 450 watts of power. The craft, weighing in at 27 pounds with its 32’ wingspan, had a service ceiling of 20,000 feet (6,100 m) depending on available sunlight. 1975 saw both the departure of Roland Boucher and damage to Sunrise I in a windstorm. It also saw the
introduction of the improved Sunrise II, built in just three months. Its maiden flight was on September 27, 1975 at Nellis AFB. Improvements included a single Astro Flight Cobalt 40 motor powered by 4480 solar cells with an output of 600 watts. Climb rate was drastically improved at over 300 feet (91 m) per minute as was the estimated service ceiling of 75,000 feet (23,000 m), although actual flights did not exceed 20,000 feet (6,100 m) due to problems with both command and control.

In 1975 he conceived and developed a radio controlled electric model car, and along with his wife, Nancy, formed Leisure Electronics to manufacture and market the product. Unsuccessful at first, it soon became a big hit with toy sellers throughout the nation.

In 2000 he was inducted into the Academy of Model Aviation (AMA) Model Aviation Hall of Fame.

Subjects and Indexing Terms
Boucher, Philip A., 1932-
Hughes Aircraft Company.
United States. National Aeronautics and Space Administration.
Nellis Air Force Base (Nev.)
Project Sunrise
Solar Aircraft

Box 01
Flight Books

Folder 01 - Correspondence
Physical Description: 3. Correspondence to Roland Boucher from Starr J. Colby, February 26, 1979 4. Envelope addressed to Roland Boucher from Senate California Legislature Ross Johnson 5. Correspondence to Roland Boucher from Dave Brown, President AMA, August 1, 2000 6. Correspondence to Don Lowe, President AMA from Roland Boucher, July 9, 1990 7. Correspondence to Roland Boucher from John Worth, Executive Director Academy of Model Aeronautics, February 24, 1972

Folder 02 - Articles

Folder 03 - Packets and Information
Folder 04 - Photographs and Images

Folder 05 - Envelope Negatives
Physical Description: 54. Contents of an envelope containing photograph negatives, prints, and receipts

Folder 06 - Slide Copies and Originals

Folder 07 - Slides I

Folder 08 - Slides II