



The AMA History Project Presents: Autobiography of ROY L. CLOUGH, Jr.

Born November 18, 1921 Modeler since 1931
AMA #3254



Written & Submitted by RLC; Updated 7/2002, with material from MA magazine (2000); Transcribed by NR (5/1997); Edited by SS (2002); update by JS (09/2006)

Career:

- Designed the Berkeley “Cloud Copters”
- Designed the first ground effect vehicle in late 1930s
- Built successful rubber powered helicopters and gas powered versions in the 1950's
- Built ducted fan delta in late 1940s
- Was an early builder of reso-jets
- Designed and built glow and diesel engines
- Built a steam-powered control liner
- Designed the original free flight version of the Martian Spaceship
- Have built and flown Flettner-type rotor planes as early as the late 1950's
- Originated the slotted flying saucer design made popular by Fran McElwee
- Built and flown several types of autogyro
- In 1948, built a liquid fuel rocket with compressed air oxidizer
- 22 years as Chief Engineer of high tech firm
- Four years as an Ind. Consultant
- Worked as reporter/writer/editor New Haven Journal-Courier, Eastern Pilot
- At present, a freelance writer/designer, author of four books, including 1930s period novel: A Brief History of the Ashmont Town Team etc.
- Long time C&W musician, pedal steel, Dobro. Designer and builder of many instruments

Honors:

- 1999: Model Aviation Hall of Fame
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Roy L. Clough, Jr. submitted the following autobiography.

I was about 10-years-old when I built my first flying model out of pine sticks, gray building paper, and inner-tube rubber. It flew about 25 feet and I was hooked.

My first kit was a Guillow's 10-cent Spad, given to me by a little girl who drew my name in a school Christmas party. The Spad wound up as a mid-wing that would not fly. Early inspiration to design my own sparked by Gordon Light's Wakefield winner. It proved a good pattern.

I have built models with all sorts of power including rubber, compressed air, steam, rocket, park ignition, glow engines, and electric motors. One early model, best forgotten, even had a clock spring motor.

I developed an early interest in unusual, unorthodox, new types etc., and in early 1940's built successful rubber powered helicopters and gas powered versions in the 1950's. Both types were widely copied.

I got into magazine projects by accident when Popular Science's Workshop Editor, the late Harry Walton, was told by his secretary, Ria Nichol, that during a visit to my wife and me in Now Haven she had seen me repeatedly fly a model helicopter from one tabletop to another. When I discovered I could be paid for this stuff, I published a lot of it in MAN, FM, Pop Science, Air Trails, Science & Mechanics, Popular Mechanics, and Mechanix Illustrated. I also designed the Berkeley "Cloud Copters." My rotor system was widely copied, including by Cox Manufacturing who never acknowledged or paid for it. Considering the job they did on Jim Walker, I figured I lacked the resources to buck them. Later involvement with Big John Elliot and Larry Renger was pleasant and productive, but they fared no better at the hands of Cox management.

I had a lot of firsts including perhaps the first ground effect vehicle. It was a small gas engine powered model about three feet long. It worked great, but all the dirt, grass, and twigs it threw up convinced me the idea was practically useless. Talk about blowing it!! I could have had a basic patent. Later on, I built a .049-powered model for Popular Mechanics, which they reprinted in one of their workshop books.

I built several early ducted fans, maybe the first to achieve worthwhile thrust. I was flying Free Flight versions when Bill Effinger and Don McGovern could not get their Control Liners off the ground, but what they told me was helpful to my later designs. Also, I built two or three pressure Jets. Only one of these was published but I might get back to the idea. Jets published in Air Trails & Popular Science. I was an early builder of reso-jets; the smallest had 7/16 diameter and a tailpipe made from telescoping tubing sections from a golf club. I slid sections back and forth like a trombone to locate the proper resonant frequency. I designed and built glow and diesel engines. Little Dragon, published in Model Airplane News is the best known. I converted an OK C02 motor to run very poorly as a diesel. I also built a small steamboat and a steam racecar for Popular Science. I built a steam-powered Control Liner that blew up on take-off.

I designed a gas helicopter with 48" self-powered rotor that flew well on Cox .02. Pop Science.

Originated the slotted flying saucer design, (Air Trails,) but it was made popular by Fran McElwee who carried the design forward. Much later, I published a couple of versions in Model Builder.

While I designed the original Free Flight version of the Martian Spaceship, (Air Trails,) Skip Ruff should get the lion's share of the credit for the bigger radio control versions that have made such a hit on the West Coast.

I built and flew Flettner-type rotor planes as early as the late 1950's. Model Aviation News, Popular Science, latest "Rotorplane!" in MAN. (*) See bibliography

Built and flown several types of autogiro. MAN. Autogyro kites for PS and S~&M. Built early but not greatly successful electric in the 50's.

In 1948, I built a liquid fuel rocket with compressed air oxidizer that blew up with a very satisfactory bang.

Despite early AMA membership have, until recently usually been a loner. Now, in the springtime of my senility have joined up with the Winnepesaukee Radio Controllers, and acquired a great bunch of flying buddies.

I'm likely to try any construct that gets my interest. As a result of this, I know more things that won't work than anybody.

Background includes:

22 years as Chief Eng. of high tech firm,

Four years as an Ind. Consult.

Worked as reporter/writer/editor New Haven Journal-Courier & Eastern Pilot.

Co-authored a McGraw-Hill text on Industrial Psych.

At present a freelance writer/designer, novelist, and semi-pro C&W musician pedal steel/ Dobro/ keyboards. Have worked with Paul Main, Hank Thompson, Dick Curless, and ran my own "Stateliners" for a few years, but enforcement of tough driving and drinking laws has wreaked havoc on the cabaret scene.

Although I believe I am widely known as a designer of "weirdoes," I wonder what these same readers would think if they had seen some of the stuff, I tried but did not publish. Reason? It has always been my policy to publish only those things that were easy to build, were not dangerous, and would work on the first try for anybody. This ruled out my regen engine that developed so much ungovernable power it kept blowing up; my fuelless flying machine that would have to dump energy continuously to avoid melt-down, and a new system of propulsion that pilot and passengers probably could not live with. Fun stuff, but practically just curiosities.

Currently I have a couple of dozen hot model projects in the works, which, now being retired, I'll finish doing whenever so will not interfere with goofing-off.

Bibliography:

AM= American Modeler

AP= Airports Magazine

AST= Astounding Science Fiction

AT= Air Trails

AZ= Amazing Stories

BL= Boy's Life

CL= Car Life

FM= Flying Model

MA= Model Aviation

MAN= Model Airplane News

MI= Mechanix Illustrated

MN=Merchandising News

PM= Popular Mechanics SM= Science & Mechanics

PMA= PM Shop Man

PS= Popular Science

RTV= S&M's RAD.TV.EX

Date	Magazine	Title, Subject or Content
June 1945	<i>Hunt. Fish</i>	Several Hum. Verses anent H&F
Sept. 1945	<i>Bas. Des.</i>	Problems of Model Helis
Oct. 1945	<i>AP</i>	Dear Mr. Small Operator
Oct. 1945	<i>Sky Raiders</i>	Is German.Sec. Weapon a Rocket Plane?

Oct. 1945	<i>PS</i>	Skyhook Coax Helicopter
Jan. 1946	<i>PS</i>	Air Freighter of the Future?
Jan. 1946	<i>MAN</i>	SOS to Model Manufacturer
March 1946	<i>MAN</i>	Unorthodox Design
April 1946	<i>PS</i>	“Naclio” Steamboat Model
Summer 1946?	<i>PS</i>	Roadable Plane Model
Sept. 1946	<i>PS</i>	Triad (Radial Wing FF Model)
Sept. 1946	<i>MAN</i>	Speed Made Easy
Oct. 1946	<i>AT</i>	Cage Drive Rubber Co-Ax Helicopter
March 1947	<i>PS</i>	Steam Powered Model Race Car
May 1947	<i>MAN</i>	More About Model Helicopters
May 1947	<i>PS</i>	Stressed Paper U-Control (Atom .05) Car and Plane in Home Workshop Annual for 1950
Aug. 1947	<i>AT</i>	Evolution of the Model Plane
Sept. 1947	<i>MAN</i>	Hoverbug Rubber Powered Helicopter
Feb. 1948	<i>MAN</i>	Improving CO2 Performance – Wat. Jack.
Jan. 1948	<i>MAN</i>	Autogiro Theory
March 1948	<i>MAN</i>	Autogiro Free Flight Rubber Job
April 1948	<i>PS</i>	WHIZZER CO2 Racing Boat Model
June 1948	<i>MAN</i>	Experiments with Expansion Engines
Aug. 1948	<i>MAN</i>	English Gyro to Clough Specs
Nov. 1948	<i>AT</i>	Beginners’ Goat (Still Flying, March 1990)
May 1949	<i>MAN</i>	Theory of Rotor Planes
Aug. & Sept. 1949	<i>MAN</i>	Reworking Old Engines
April 1950	<i>MAN</i>	WhirliCO2pter
Mo.? 1950	<i>AZ</i>	Social Obligation – STF
Mo.? 1950	<i>AZ</i>	How the Saucers Fly
Sept. 1950	<i>MAN</i>	Flying Saucer Design
Oct. 1950	<i>MAN</i>	Little Dragon Glow Engine
Nov. 1950	<i>MAN</i>	Part 2
Mo.? 1950	<i>AZ</i>	Micrometer in Your Brain
April 1951	<i>PS</i>	Why Shacks Come Apart (Foundations)
June 1951	<i>AST</i>	Bait (Picked up for Anth. Space Police)
Aug. 1951	<i>FM</i>	Try a Helicopter
Aug. 1951	<i>MAN</i>	Why Models Land in Trees (Prof. Tate)
Mo.? 1951	<i>MAN</i>	Flying Barrel – Description and pictures only
July 1952	<i>MN</i>	Small Dealers on the Carpet
Aug. 1952	<i>AT</i>	Build Flying Saucer (Famous slot job)
Sept. & Oct. 1952	<i>AT</i>	What’s the Score on Helicopters?
Dec. 1952	<i>PS</i>	Fly a Plane in the Living Room
Feb. 1953	<i>FM</i>	Sikorsky S51 TR Helicopter
July 1953	<i>AT</i>	Turbine (Duct. Fan.) Jets for Models

Aug. 1953	<i>AT</i>	Below Bug Pressure Jet Model
Sept/ 1953	<i>PS</i>	Jetex Driven Turbie – FF Model
Nov. 1953	<i>AT</i>	Two-Part Helicopter Design Dope
Aug. 1954	<i>PS</i>	Hydrojet Powers Tiny Boat
June 1954	<i>SM</i>	TR Helicopter .049
Mo.? 1954	<i>?</i>	Reprinted Model Craft V3, 1954
Not. Pub.	<i>PS to BERK</i>	Oil Can Reso-Jet
Pub. 54-55	<i>AT</i>	Doggerel Verse Fillers
April 1954	<i>AT</i>	Martian Spaceship
July 1954	<i>AT</i>	Typhoon Expansion Engine
Nov. 1954	<i>AST</i>	It Didn't Come From Mars
Aug. 1954	<i>FM</i>	Stunt Goat CL Model
Annual 1955	<i>AT</i>	Sikorsky R-6 Helicopter TR
Mo.? 1954	<i>PS</i>	Co-axial Autogiro Kite
Mo.? 1954	<i>PS</i>	More Fillers per Request
July 1954	<i>PS</i>	Fourth of July Noisemakers
July 1954	<i>AT</i>	Channel Wing Control Line Plane
Mo.? 1954	<i>AT</i>	Tri-Yi Rubber Model
Sept. 1954	<i>AT</i>	January Alouette' .049 Duct Fan – Ukie
Oct. 1954	<i>AT</i>	Wind Wagon Air Drive Race Car
JORA 1954 S	<i>BL</i>	Mille Diesel Endurance – Ukie
Dec. 1954	<i>PS</i>	Ceiling Repair Fillers
Dec. 1954	<i>PS</i>	Uses for umbrella ribs
Jan. 1955	<i>PS</i>	Electric Shop Heater from Oil Can
Mo.? 1954-55	<i>PS</i>	Things to do with Coffee Cans
Mo.? 1954-55	<i>PS</i>	Turbine Jet Race Car Model
Feb. 1955	<i>PS</i>	Model Submarine Baulilus
March 1955	<i>AT</i>	Venusian Scout
Aug. 1955	<i>AT</i>	Saturnian Space Skimmer
Aug. 1955	<i>PM</i>	Slat Wing Control Line Trainer
Sept.1955	<i>AT</i>	TanGiro Twin – CL Autogiro
Oct. 1955	<i>AT</i>	Teenie Genie
Oct. 1955	<i>AT</i>	Tri-Yil
Dec. 1955	<i>PS</i>	Aerial Tramway
Dec. 1955	<i>AT (YM)</i>	TEE JAY'Super Delta Ducted Fan
Mo.? 1955	<i>CL</i>	Phantom of the Turnpike
Dec. 1955	<i>SM</i>	Rebec Medieval Three String Violin
March 1956	<i>AT</i>	Sheet Metal Susie
June 1956	<i>MAN</i>	Lil' Dragon Used as School Project
June 1956	<i>AT (YM)</i>	Cement Drives Crazy Water Gadgets
Pub. 1956	<i>AT Ann</i>	Special Case of TR Helicopters
March 1957	<i>AM</i>	Tumblewing CL Flettner Rotor Plane
Dec. 1957	<i>AM</i>	Famous Firsts (Yet to be Made)
July 1960	<i>PS</i>	Rebuild of Cecil Peoli Twin Pusher

Sept. 1960	<i>AM</i>	Typhoon's Expansion Engine
Feb. 1961	<i>SM</i>	Two String Splinter Bass
June 1961	<i>SM</i>	Triple Neck Steel Guitar
June 1961	<i>PS</i>	Tethered Ducted Fan Jet Plane
Sept. 1961	<i>PS</i>	Boat that Flips to Go (Porp. Tail Dr)
Nov. 1961	<i>SM</i>	Reader Report on Guitar Projects
Jan. 1962	<i>PM</i>	Ground Effect Vehicle Air Car
Annual 1963	<i>PMSHOP</i>	Reprint GEV
Sept. 1962	<i>PS</i>	Platter Plane-Non-Slot Saucer
Sept. 1962	<i>PM</i>	Old Mill Waterwheel Table Centerpiece
Mo.? 1961-62	<i>MAN</i>	Model Helicopter Dynamics
Feb. 1962	<i>A.E. Esty Machine and Tool Employees Manual</i>	
March 1962	<i>MAN</i>	Nervous Nellie .05 Stunt Job
May 1962	<i>PS</i>	Self-Powered Rotor Helicopter
July 1962	<i>PM</i>	Remember the Spinning Wing Autogiro?
Aug. 1962	<i>AM</i>	Spinning Disk Model Ven. Scout
Sold Aug. 1962	<i>PM</i>	Control Line Kite
Nov. 1962	<i>SM</i>	Whirlybird Co-Axial Autogiro Kite
Nov. 1962	<i>AM</i>	Snapper .49 FF Speed Job
1962	<i>Crestwood</i>	Please Shake Carefully (Humor)
Sold Dec. 1962	<i>PM (Pub?)</i>	Tetra Four Radial Wings Ukie (X-Wing)
Dec. 1962	<i>MI</i>	String Phones Deluxe
Dec. 1962	<i>AM</i>	Peter O'Dactyl
Mo.? 1962	<i>SM</i>	Homemade Vernier Dials
Mo.? 1962	<i>PM</i>	Vapor Pressure Drivers Model Boat
Pub. 1962-63	<i>Sam Bierman</i>	How to Open Anything (Humor)
Jan. – Feb. 1963	<i>AM</i>	Yankee Flea Tandem
March 1963	<i>MI</i>	Darkroom Light Box
March 1963	<i>PM</i>	Mystery Moving Box and Kite, p. 164
March 1963	<i>PS</i>	Styrofoam Model Oos on Cox .010
April 1963	<i>PM</i>	Hoopskirt Annular Wing FF
June 1963	<i>AM</i>	Turkey Buzzard Flying Plank Type
June 1963	<i>PM</i>	Water Skating Model Boat
Aug. 1963	<i>PM</i>	Wind Rotor Drives Boat Propeller
Fall 1963	<i>SMRTVEXP</i>	Speaker Box Does Everything
Fall 1963	<i>SMRTVEXP</i>	Electric Amp for Banjo
Nov. 1963	<i>SM</i>	Moon Scout
Nov. 1963	<i>PM</i>	Electric Centrifugal Cannon
Mo.? 1963	<i>PM</i>	Harlequin Stressed Paper Glider
Mo.? 1963	<i>PM</i>	Control Line Stunt Kite

As a result of being bugged by Skip Ruff and Bill Northrop in 1990. First published was in

MAN, July 1992 a review of “Modelcad.” Then “Multiwiz” in August 1992 in *MAN*. More articles are due in *MAN*, *FM*, and *MB*.

Date	Magazine	Title, Subject or Content
July 1992	<i>MAN</i>	CAD for Your Model Designs
Aug. 1992	<i>MAN</i>	Multiwiz Model 2-Channel From 1 Servo
June 1993	<i>MB</i>	Pushcart .049 RC Pusher
July 1993	<i>MAN</i>	Rotorplane! Flettner Wing-Rotor
Oct. 1993	<i>MB</i>	Saucer Mania Two Slot Saucers
Feb. 1994	<i>MB</i>	Ment. RLC Award Winner
May 1994	<i>FM</i>	Morles 1915 .049 FMBD RC
May 1994	<i>MB</i>	Pix Reader Built Zoomslot
July 1994	<i>MB</i>	Ment. Adv. For Martian SS
July 1994	<i>FM</i>	Ment. FM Helic. Of August 1951
Aug. 1994	<i>MB</i>	Mention
Nov. 1994	<i>MB</i>	Traysvite
May 1995	<i>FM</i>	Ment. Page 7 and Class, Gas and Jazz
June 1995	<i>MAN</i>	Ment. Page 28 and 57 Martian Spaceship
July 1995	<i>MAN</i>	Ment. Hal DeBolt’s Col. On Early RC
Aug. 1995	<i>MAN</i>	Stringer Wing-Warp Control 02 RC
Oct. 1995	<i>MAN</i>	Designed 2D 6.0 Critique
Nov. 1995	<i>MB</i>	R.K. Hicks FF Electric
Dec. 1995	<i>MAN</i>	Air Age RC Book Chapter “Mindset”
Dec. 1996	<i>MAN</i>	Ringer Annular Wing .049 RC
Dec. 1996	<i>FM</i>	Faux Fighter FMBD ‘Pilchard’
Dec. 1996	<i>MA</i>	Aileron Trainer
Dec. 1996	<i>FM</i>	Materia Aeronautica Modela

The following list of articles are missing from my files and have incomplete information.

Date	Magazine	Title, Subject or Content
Early 1960s	<i>AT or MAN</i>	Flying Barrel
Early 1960s	<i>PS</i>	Gyro Glider Kite
Sold April 1967	<i>PM</i>	Foilplane, Flying Body Aircraft
Early 1960s	<i>Lost by AT</i>	Maple Seed Jetex Powered One-Bladed Helicopter

Other Projects

- Constructed the steam-powered race car model made for Minimax importer
- Cloud Copters Designed for Berkley Models
- Hummingbird Helicopter Design for Hamp. Research Foundation]
- Helicopter engine design with K & B
- Helicopter blade system for Sikorsky Aircraft Patent Inter.
- Co-authored text on Ind. Psych. With Dr. Brian Kay, McGraw-Hill
- Wrote novel: “A Brief History of the Ashmont Town Team vs. Equestrian Statue.”

(signed) Roy Clough, Jr.
Updated July 15, 2002

The following biography was printed in the February 2000 issue of Model Aviation magazine.

Roy Clough, 77, has devoted 66 years to a seemingly unending array of experimentation. Over the years, his articles have appeared in virtually every model publication, including the early *Air Trails*. In addition, he is published in *Popular Mechanics*, *Popular Science*, *Science and Mechanics*, *Boys' Life*, *Mechanics Illustrated* and many others. With well more than a hundred specific subjects listed, his writings encompass the time from 1945 to the present.

The subjects of his experimentation cover a very wide range of interest from specific conventional model designs to more esoteric types such as slotted flying saucers and flying barrels. Roy has done much work with autogyros and helicopters, especially with blade design. He developed the coaxial cage drive for rubber model helicopters and the use of tip weights on feathering rotor blades to produce automatic cyclic and collective pitch. He also developed the use of gyro procession of blade-mounted motors to control collective pitch of self-propelled rotors.

Roy also developed a torque-reaction helicopter and a single-bladed Jetex helicopter. Recent articles pursued such subjects as CAD for model designs, multi-wing two-channel models from one servo, Free Flight, Electric, and an aileron trainer.

Roy's articles were not limited to technical information and designs. Titles such as "Why Models Land in Trees" suggest a sense of humor, as does his personal comment regarding experimental engine projects, including a "liquid rocket engine which blew up with (a) very satisfying bang!"

Besides model design, Roy provided technical information for the aircraft industry and administrative information such as industrial psychology and marketing.

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