



Smithsonian
National Air and Space Museum

Robert C. Truax Collection

Tyler Love

2016



National Air and Space Museum Archives
14390 Air & Space Museum Parkway
Chantilly, VA 20151
NASMRefDesk@si.edu
<http://airandspace.si.edu/research/resources/archives/>

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Collection Overview

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| Repository: | National Air and Space Museum Archives |
| Title: | Robert C. Truax Collection |
| Identifier: | NASM.2016.0008 |
| Date: | 1929-2005 (bulk 1980-2000) |
| Extent: | 11.99 Cubic feet 12.95 Linear feet (21 Legal Size Boxes, 1 Slim Legal Size, 3 Shoe Boxes, 1 Flat Box) |
| Creator: | Robert, C. Truax, 1917-2010 |
| Language: | English |
| Summary: | Robert Truax was one of the great originals of American rocketry and a major proponent and inventor of ultra-low-cost rocket engine and vehicle concepts. |

Administrative Information

Acquisition Information

Truax Estate, gift, 2016

Processing Information

The processing archivist kept original file unit titles when possible. Titles written by the archivist appear in brackets.

Preferred Citation

Robert C. Truax Collection, Acc. 2016-0008, National Air and Space Museum, Smithsonian Institution.

Restrictions

No restrictions on access.

Conditions Governing Use

[Permissions Requests](#)

Biographical / Historical

Robert Truax (1917-2010) was one of the great originals of American rocketry and a major proponent and inventor of ultra-low-cost rocket engine and vehicle concepts. A longtime member of the American Rocket Society (serving as its president in 1957,) He received the Robert H. Goddard award for outstanding work in liquid propellant rockets as well as the Legion of Merit citation for his conceptual work on making the "Polaris" guided-missile submarine a primary naval weapon. Truax was also inducted into the Air Force Space and Missile Pioneers Hall of Fame in 2003.

Inspired by Robert Goddard, Truax began building rockets when he was a teenager in California. From 1936 to 1939, while enrolled at the United States Naval Academy, he tested liquid-fueled rocket motors. During the late 1940s, he organized the US Naval Missile Test Center's propulsion laboratory at Point Mugu, California, and headed rocket development within the Navy's Bureau of Aeronautics where he advanced the concept of a staged combustion system upon which the Space Shuttle's main engines would eventually rely. In 1946, Truax led a team that interrogated the rocket engineer for Nazi Germany, Wernher von Braun.

By 1955, however, his proposal for a submarine-launched ballistic missile had failed to win Navy approval and he joined the Air Force's newly established Western Development Division (WDD) From 1955 to 1958, Captain Truax headed the Thor intermediate-range ballistic missile (IRBM) development program. Truax studied the sea launching of rockets, such as the Sea Bee and Sea Horse projects. In 1959 he retired as a Captain, and headed the Aerojet-General Advanced Development Division and Aerojet's Sea Dragon project in the Advanced Development Division until leaving in 1967. In 1966 Robert Truax founded Truax Engineering Inc. (TEI,) which studied sea launch concepts similar to the earlier Sea Dragon—the Excalibur, the SEALAR (Sea Launched Rocket,) and the Excalibur S. Here his low-cost booster program plan was elaborated and further studied, but he was again unable to interest NASA or the USAF in the concept of cheap access to space.

In the 70's and early 80's, Truax, heretofore prominent in scientific communities, emerged in popular culture. Literally building rockets from his own backyard in Saratoga, Truax built both of Evel Knievel's "Skycycles" for his 1974 attempt to jump the Snake River Canyon. He later competed in the original X-prize competition to send a private astronaut into suborbital flight.

Robert Truax, died on September 17 aged 93, as a key figure in the rocket research that took America into the space age, while also being an inspiration to the do-it-yourself, back-yard amateur.

Scope and Contents

This collection consists of material relating to the career of Robert Collins Truax including correspondence, photographic material, technical drawings, technical manuals and reports, presentation and conference materials, papers by Truax, news clippings, published materials and business records for Truax Engineering, Inc.

Projects and programs referenced in this collection include the Knievel Rocket Car (Truax X-2 Sky-Cycle); X-3 Volksrocket; amphibious launchers, including the "Sea Dragon," "Sea Horse," and SEALAR (Sea Launched Rocket); the Space Shuttle program; the Gemini and Apollo programs; Rocketdyne LR89 Liquid-Fuel Motors; Rand Project; the Corona Reconnaissance Satellite; and Project Private Enterprise.

The researcher should note that the collection also contains audio-visual material. These items are not included in the finding aid but the NASM audio-visual archivist can assist you regarding access.

Arrangement

This collection was arranged into series by the processing archivist. There was no original order when the collection was received.

Series 1: Personal & Business Papers

Series 2: Papers Authored by R.C. Truax

Series 3: Drawings

Series 4: Images

4:1 - Slides

4:2 - Photos, Negatives & Floppy Discs

Acronyms

Numerous acronyms were used by the creator when labeling his file units. Some will be obvious to the researcher but the archivist has identified some acronyms that might be more unclear. Not all acronyms were able to be identified.

AFRL - Air Force Research Lab

ATD - Advanced Technology Development

BAA - possibly Broad Agency Announcement

BMDO - Ballistic Missile Defense Organization

CDRL - Contract Data Requirements List?

CPAI - Chemical Propulsion Information Agency

ITAR - International Traffic in Arms Regulations

KACST - King Abdulaziz City for Science & Technology

MSFC - Marshall Space Flight Center

PMRF - Pacific Missile Range Facility

RSLP - Rocket Systems Launch Program

SEALAR - Sea Launch & Recovery

TEI - Truax Engineering Inc.

TPIPT - Technology Planning Integrated Product Teams

Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

Subjects:

Astronautics
Kneival Rocket Car (Truax X-2 Sky-Cycle)
Manned space flight
North American Aviation, Inc. Rocketdyne Division
RAND
Rocketry
SEALAR (Sea Launched Rocket)
Space Shuttle Program (U.S.)
Truax X-3 Volksrocket

Container Listing

Series 1: Personal & Business Papers, 1929-2005

18 Boxes ((17 Legal Size Boxes, 1 18.75x3x15 Flat Box))

Box 1

This series contains the personal and business papers of R.C. Truax. The processing archivist combined these papers into one series because of the lack of original order and the difficulty of sometimes telling the private papers from the business papers. Many file units came with no titles or very ambiguous titles so the processing archivist made the decision that arranging the materials in chronological order might prove the most useful for the researcher.

| | |
|-------------------|---|
| Box 1, Folder 1 | Diplomas, 1929-1992 |
| Box 1, Folder 2 | [Materials re: Patenting], 1930-1994 |
| Box 1, Folder 3 | Old Rocket Articles, 1937-1979 |
| Box 1, Folder 4 | [Correspondence], 1937-2004 |
| Box 1, Folder 5 | <i>The Lucky Bag</i> 1937 [United States Naval Academy Yearbook] |
| Box 1, Folder 6 | <i>The Lucky Bag</i> 1938 [United States Naval Academy Yearbook] |
| Box 1, Folder 7 | [Magazines], 1938-1998 |
| Box 2, Folder 1-4 | [Newspaper/Magazine Articles], 1938-1998 |
| Box 2, Folder 5 | [Serial No. EES B-5350-Y Navy Dept., Bureau of Aeronautics - Jet Propulsion Note No. 5: <i>Construction & Testing of a 100 lb Thrust, 20 Second Liquid-Propellant Rocket Motor Test Stand</i> by William Schubert, Lieutenant, USNR], Sept 1 - Oct 1, 1943 |
| Box 2, Folder 6 | Fotos Importantes & CORONA Article, 1945-circa 1995 |
| Box 2, Folder 7 | Patent Documents, 1946-1964 |
| Box 2, Folder 8 | [<i>Preliminary Design of a Long Range Rocket</i>], 1949 |
| Box 2, Folder 9 | PIX, 1949-2002 Drawings & photos. |
| Box 2, Folder 10 | BOB Topping Turbine Engine, 1950-1959 |

- Box 3, Folder 1 Final Report of the Ad Hoc Space Flight Committee of the American Rocket Society, 1952
- Box 3, Folder 2 [Corporal Handbook No. 1: *Principles of the Corporal XSSM-G-17 System - Preliminary Edition*], Jan. 1952
- Box 3, Folder 3 [*A Rocket Engineer's Views on Space Flight* by C.C. Ross], May 28, 1953
- Box 3, Folder 4 [R.C. Truax Fitness Reports], 1955-1959
- Box 3, Folder 5 Task 1 – 75K Engine, Bob's Desktop File, Phase II, 1955-2000
- Box 3, Folder 6 [*Space Flight Program - Report by the Space Flight Technical Committee of the American Rocket Society*], 1957
- Box 3, Folder 7 [National Advisory Committee for Aeronautics, Technical Note 4047: *A Study of the Motion & Aerodynamic Heating of Missiles Entering the Earth's Atmosphere at High Supersonic Speeds* by Allen & Eggers, Oct. 1957
- Box 3, Folder 8 All About R.C. Truax, 1957-circa 1992
Various condensed bio's, a reference letter, draft profile for possibly a "Who's Who" publication.
- Box 3, Folder 9 National Aeronautics and Space Act of 1958 - Reference - TEI General
- Box 3, Folder 10 Reports from Minneapolis – Honeywell Aeronautical Division, 1958-1998
- Box 3, Folder 11 Miscellaneous Technical Publications and News Clippings, 1958-1999
- Box 3, Folder 12;
Box 4, Folder 1 Target Configuration No. 5, 1959-2002
- Box 4, Folder 2 Gas Gas [aka Vapor-Vapor] Program, 1961
- Box 4, Folder 3 Technical Manual, Operation-Maintenance, USAF Model SM-65E Missile Weapon System. Diagram Manual Pneumatic System. T.O. 21-SM65E-2D-9-1, May 1961
- Box 4, Folder 4 Cost Effectiveness, 1962-1966
- Box 4, Folder 5-6 ["Sea Dragon" Binder], 1963
- Box 5, Folder 1 [Technical Manual, Field Maintenance T.O. 2K-LR89-6: Rocket Engine, USAF Model LR89-NA-3 (Rocketdyne) 22 Sept. 1961. Changed 15 Oct. 1963]

- Box 5, Folder 2 IAF Article, circa 1963 - circa 1983
Contains no actual article, just photos (including of Truax receiving the Legion of Merit,) diagrams, test summaries, "Options for a Small Launch Vehicle" possibly a TEI press release?
- Box 5, Folder 3 [Aetron - *Proposal Information for Big Boy Test Facility. Dade County, FL*], Jan. 1964
- Box 5, Folder 4 Navy BAA / ATD Proposal Oct. 1995, 1964-1998
- Box 5, Folder 5 Dark Horse, 1965-1967
- Box 5, Folder 6 [Correspondence re: Seahorse], 1965-1968
- Box 5, Folder 7 National Space Policy, 1968-1992
- Box 6, Folder 1-2 [NASA Technical Memo X-64711, Compatibility of Materials with Liquid Oxygen, Vol. 1 by C.F. Key, Astronautics Laboratory], October 1, 1972
- Box 6, Folder 3 Ken Carter Jump, 1976
- Box 6, Folder 4 Newspaper Reports of Truax Rocket Projects, mostly if not all in Saratoga, 1977-1989
- Box 6, Folder 5 [TEI - *A Low Cost Manned Space Project*], circa 1980
- Box 6, Folder 6 Media Materials, 1980-?
- Box 6, Folder 7 [Product Information], 1981
- Box 6, Folder 8 Draft Input Texts WJSA [W.J. Schafer Associates] Report, 1982-1997
- Box 6, Folder 9 [Technical Papers by Various Authors (not including Truax)], 1982-1992
- Box 6, Folder 10 Joint Venture Agreement between Truax Engineering, Inc. and Fell Peters, 1983
- Box 6, Folder 11 Articles that Mention TEI, 1983
- Box 6, Folder 12 Technical Manual: Rocket Engine, USAF Model LR89-NA-5 (Rocketdyne), 17 March, 1983
- Box 7, Folder 1 CPIA Publication 398: Propulsion Cost Estimation, 1984 JPM Specialist Session, 1984-1988

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| Box 7, Folder 2 | X-3, 1984-1988 |
| Box 7, Folder 3 | [Miscellaneous, Found Loose in Collection], 1985-1996 Includes a poem, xerox'd images, notes, sections of presentations. |
| Box 7, Folder 4 | [Space] Shuttle Data, 1986, 1996-1997 |
| Box 7, Folder 5 | Mars II Data, 1987 |
| Box 7, Folder 6 | New SWEER Article & Other Newspaper Articles, 1987-1995 |
| Box 7, Folder 7 | Official Replies |
| Box 7, Folder 8 | Miscellaneous Papers – Balzer, Greg, 1988-1989 Includes mostly diagrams and the manual "Ship Equipement Configuration Accounting System" by Dept. of Navy, Sea Systems Command. |
| Box 7, Folder 9 | Space Based Laser - Reference - TEI General, 1988, 1996 |
| Box 7, Folder 10 | Paper on RAND [Research ANd Development] and Comments, 1988-1997 Includes "H.M.S. Moon Rocket" by Tony Reichhardt & "RAND's Role in the Evolution of Balloon and Satellite Observation Systems and Related U.S. Space Technology" by Davies and Harris. |
| Box 7, Folder 11 | By-Laws of TEI. Admin./Corp. Matters - TEI General, 1989 |
| Box 8, Folder 1 | SEALAR Program Reports, 1989, 1991 |
| Box 8, Folder 2 | [TEI Miscellaneous Memos & Correspondence], 1989-2000 |
| Box 8, Folder 3 | Recovery Tech. Info, 1990 |
| Box 8, Folder 4 | [<i>Sea Dragon in the Manned Mars Mission Materials</i>], 1990 |
| Box 8, Folder 5 | "A Historical Look at United States Launch Vehicles, 1967-Present", 1990 A binder of collected data on various rockets such as Thor, Titan, Atlas, Delta, etc. |
| Box 8, Folder 6 | [<i>Proposal for Launch Segment Services for the Iridium Satellite System</i> by TEI], Dec. 10, 1990 |
| Box 8, Folder 7 | [Binder of Miscellaneous Notes], circa 1990 - circa 1998 |
| Box 8, Folder 8 | ITAR, 1990, 1991, 2001 |

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|------------------|--|
| Box 8, Folder 9 | [Materials re: SEALAR], 1991 |
| Box 8, Folder 10 | Marketing, 1991 |
| Box 8, Folder 11 | Development Idea & Concepts, 1991 |
| Box 8, Folder 12 | X-3 Data, 1991 |
| Box 9, Folder 1 | [Truax Engineering Inc. Business Plan, January 18, 1991 - Mock-Up] |
| Box 9, Folder 2 | Pacific Missile Range Facility, Range User's Handbook, Sept. 1991 |
| Box 9, Folder 3 | [SEALAR Program Final Report. Conducted for U.S. Naval Research Lab, Dec. 15, 1991] |
| Box 9, Folder 4 | Misc. Misc., 1991-1993 Business/financial related correspondence. |
| Box 9, Folder 5 | New Coml. Bus. [Commercial Business?], 1991-1995 |
| Box 9, Folder 6 | Copias de Papeles [Copies of Papers] del Bob, 1991, 1995 |
| Box 9, Folder 7 | SEALAR PDR Jan. 23, 1991, 1991, 1999 Possibly this is supposed to say "PRD" for Program Requirements Document? |
| Box 9, Folder 8 | [Truax Engineering Inc. Info/History], circa 1991-1999 |
| Box 9, Folder 9 | Miscellaneous Technical, 1991-2000 |
| Box 9, Folder 10 | SEALAR Miscellaneous Admin. - TEI General, 1991, 2001 |
| Box 9, Folder 11 | [Truax Engineering Inc. Business Miscellaneous], 1991-2004 Mostly correspondence, with notes and prepared statements? |
| Box 10, Folder 1 | Malewicki, Doug / Robosaurus, 1992, 1998 |
| Box 10, Folder 2 | Loans, 1992?, 2000 |
| Box 10, Folder 3 | All About TEI, 1993 Copies of a short piece of writing called "A Word About Truax Engineering." |
| Box 10, Folder 4 | [Draft, Research Report No. AU-ARI-93-XX: <i>LEO [Low Earth Orbit] on the Cheap, Methods for Achieving Drastic Reductions in Space Launch Costs</i> by John R. London III, Lt. Col, USAF], July 1993 |

- Box 10, Folder 5 Miscellaneous Tech Data / Tech Info & Cost, 1993-2001
- Box 10, Folder 6 [Truax Engineering Inc. - A New Kind of Naval Warfare / Synopsis: A Sea-Launched Global Munitions Delivery System], 1995
- Box 10, Folder 7 Tarbaby/BMDO Target Carrier, 1995
- Box 10, Folder 8 CIA Cold War Records: *CORONA: America's First Satellite Program*, Kevin C. Ruffner, Editor. 1995
- Box 10, Folder 9 [*An Orbital Launch Vehicle for Military Purposes* by TEI], April 1995
- Box 10, Folder 10 Ballistic Missile Defense Organization, Space-Based Laser for Theater Missile Defense. Unclassified Portion of the Cost Analysis Requirements Document, July 6, 1995
- Box 10, Folder 11 TEI - *Strategic Bombing in the 21st Century*, Nov. 1995
- Box 11, Folder 1 Miscellaneous Materials, CORONA, 1995-1996
Includes a technical review draft, xeroxs of newspaper and magazine articles and a paper called "Reducing the Cost of Space Launch."
- Box 11, Folder 2 Theater Missile Defense Target - Reference - TEI General, 1995, 1999
- Box 11, Folder 3 Fire Meyer (?), 1995, 2001
- Box 11, Folder 4 Excalibur, 1996
Includes notes, calculations, correspondence, design description.
- Box 11, Folder 5 Bantam Briefing, 1996
- Box 11, Folder 6 Miscellaneous Correspondence. Excalibur 75K Engine - Schafer, 1996
- Box 11, Folder 7 Excalibur (General Information) - Technical - TEI General, 1996
- Box 11, Folder 8 NASA Prog. Bantam Lifter, 1996
- Box 11, Folder 9 [*X-34 Test-Bed Technology Demonstration Vehicle Proposal* by TEI], May 10, 1996
- Box 11, Folder 10 [*Bantam System Technology Project Proposal* by TEI], June 6, 1996
- Box 11, Folder 11 [*A Proposal to Provide a Technology Demonstration & Concurrent Design Program to Prove the Financial & Technical Feasibility of the Launch, Recovery*

& Relaunch of a Pressure Fed Sub Orbital Test Bed Utilizing the Corporal Rocket by TEI], Aug 1996

- Box 11, Folder 12 M-1 Costs via NASA File Notes
Compiled 1996.
- Box 11, Folder 13 W.J. Schafer Associates Correspondence - Consultant Agreement Contract,
1996-1997
- Box 12, Folder 1 W.J. Schafer Associates Correspondence - Sub-Contract N. SDIO84-92-c-0008,
1996-1997
- Box 12, Folder 2 Talk, 1996-1998
Xeroxed magazine article on Sea Launch, copies of some Truax papers.
- Box 12, Folder 3 Old Notes, 1999-2000, Excalibur, SBIR PH II, Early Target Configs., 1996-2000
- Box 12, Folder 4 Contract History, 1996-2001
- Box 12, Folder 5 Patent / Patent Rights - Reference - TEI General, 1997
- Box 12, Folder 6 Viewgraphs, 1997
Apparently from various presentations.
- Box 12, Folder 7 [W.J.] Schafer [Associates, Inc. re: Excalibur Contract], 1997
- Box 12, Folder 8 [*A Conceptual Design Study Report for the Excalibur SBL Launch System*
Prepared by Study Group led by Capt. R.C. Truax, USN (Ret.)], Jan. 1997
- Box 12, Folder 9 [*Excalibur RLV Technology Roadmap (120,000 lbs to LEO)* Prepared for NASA
MSFC Preliminary Design Group by TEI], July 27, 1997
- Box 12, Folder 10 W.J. Schafer Associates Report. SBIR - Phase I, Aug. 8, 1997
- Box 12, Folder 11 NASA - Correspondence - TEI General, 1997-1998
- Box 12, Folder 12 Monthly Progress Reports, 1997-1998
- Box 12, Folder 13 Bantam Lifter, TEI General - Reference, 1997-1998
- Box 12, Folder 14 Test Stand Design (Mason/Socorro), 75K Engine, AFRL SBIR Contract – Phase
II, 1997, 1999
- Box 13, Folder 1 Injector Design (TEI) - Technical - TEI General, 1998

Box 13, Folder 2 AFRL SBIR Progress Report Phase I, 1998

Box 13, Folder 3 Knievel Biography – [Eric] Shepard [Producer, E! TV] - Personal. R.C. Truax, 1998

Box 13, Folder 4 Phase I SBIR Correspondence - Contract N.F29601-98-c-0112, 1998

Box 13, Folder 5 Presentations, Misc. - TEI General, 1998

Box 13, Folder 6 TEI Technical Report #98-01-TB - *"Tarbaby" A Cheap, Reusable Target Vehicle for Ballistic Missile Defense* Jan. 1998

Box 13, Folder 7 [Hard Rocket Conference MSFC (Marshall Space Flight Center?) Jan. 13-14, 1998. Conference Materials & Presentations CD-ROM]

Box 13, Folder 8 [Advanced Rocket Propulsion Component Technology - Final Report. For: Subcontract Number SC-92-c-04-49. Prepared for Schafer Corp. Report No. TEI 98-5-12], May 12, 1998

Box 13, Folder 9 Company Capabilities Statement. Admin - TEI General [TEI Statement of Past Accomplishments & Technical Capabilities], March 1998

Box 13, Folder 10 TEI [Truax Engineering Inc.] Lattice Injector Design, Technical, TEI General, 1998-1999

Box 13, Folder 11-12 Phase II SBIR Contract w/AFRL, F29601-98-C-0212, Effective Date 01 Dec 1998, 1998, 2000

Box 14, Folder 1 [CORONA Papers], 1998-2003

Box 14, Folder 2 SOW's Future Contracts. Admin. - TEI General, 1999

Box 14, Folder 3 [Excalibur XS Target Carrier Posters Signed by R.C. Truax], 1999

Box 14, Folder 4 [TEI - AFRL/VS Briefing], Feb. 1999

Box 14, Folder 5 [TEI. 2nd Quarter 1999 Status Report - Phase II SBIR - Contract F29601-98-c-0212], July 10, 1999

Box 14, Folder 6 [TEI. 3rd Quarter 1999 Status Report - Phase II SBIR - Contract F29601-98-c-0212], Oct. 10, 1999

Box 14, Folder 7 [TEI. Task 7-Vapor Pressurization. 4th Quarter 1999 Status Report - Phase II SBIR - Contract F29601-98-c-0212], Dec. 26, 1999

Box 14, Folder 8 Burt Rutan - General. TEI General, 1999-2000

Box 14, Folder 9-10 Correspondence to TEI, AFRL SBIR – Phase II, 1999-2000

Box 14, Folder 11 Term. [Termination] & Prior, 1999-2002

Box 14, Folder 12 Tech Data TRX100, 2000

Box 14, Folder 13 75K LBF Preburner Assembly, Test Article. Final Assembly Drawing Phase II SBIR, 2000

Box 15, Folder 1 [PMRF (Pacific Missile Range Facility) Briefing on "Excalibur" Dec. 5, 2000]

Box 15, Folder 2 KACST, R.C. Truax, 2000-2001
Includes notes, operation sequences/workflows, correspondence, calculations, test plans.

Box 15, Folder 3-4 Notes, Performance Data, LO TPIPT Old Schedules, 2000-2001
Also includes correspondence, PowerPoint presentations, papers, TEI annual report, engineering monthly report, memos, drawings.

Box 15, Folder 5 [Truax Engineering Meeting Notes and Memos], 2000-2003

Box 15, Folder 6 CDRL B001, 2001

Box 15, Folder 7 Stennis E-Complex

Box 15, Folder 8 Bantam Lifter Turki Rocket, circa 2001
Includes notes, calculations, printed photos.

Box 16, Folder 1 *Launch Cost as a Function of Vehicle Reliability* by Turner & Wertz, Circa 2001

Box 16, Folder 2 Pre-Phase III [Progress, Status & Management Reports for Phase III SBIR 1st-3rd Quarters], 2001

Box 16, Folder 3 [TEI - *Excalibur "L" A Non-Nuclear Strategic Deterrent (NNSD)* by Capt. R.C. Truax, USN Ret.], June 2007

Box 16, Folder 4 Phase III Before 4th Q [Excalibur Integrated Hot Fire Test Plan/Procedures, Modified LR89 Engine], July 16, 2001

Box 16, Folder 5 TEI - *A Proposed Business Plan for "American Spacelines"*, Oct. 2001

Box 16, Folder 6 Schafer Inventory [Information Matrix re: Schafer Corp. Hardware - Major Hardware Only], Nov. 2001

| | |
|-------------------|--|
| Box 16, Folder 7 | NNICBM (WWW) [War Without Wings], 2001-2002 |
| Box 16, Folder 8 | Turki [Turki-al-Saud], 2001-2002 Includes correspondence, parts list & costs, calculations and a diagram. |
| Box 16, Folder 9 | Form 1437, 2001-2002 |
| Box 16, Folder 10 | New Co. [Company?] Commercial Business Money Raising , 2002 |
| Box 16, Folder 11 | X-4 Tech [Drawings], 2002 |
| Box 16, Folder 12 | Spaceline, 2002 |
| Box 16, Folder 13 | Internal TEI Financial Matters, 2002 |
| Box 16, Folder 14 | TEI Letters from Big Shots, 2002-2003 |
| Box 16, Folder 15 | [Darrell] Issa UTTAS [Utility Tactical Transport Aircraft System], 2004 |
| Box 16, Folder 16 | Articles that Mention Bob, 2005 |
| Box 16, Folder 17 | [Spiral Notebook of Calculations], UNDATED |
| Box 16, Folder 18 | LORD Briefing, UNDATED Transparencies, 35mm negatives. |
| Box 16, Folder 19 | CAL [California] Court Case, Lease Termination, UNDATED |
| Box 16, Folder 20 | Some Weird Rockets [I Have Known,] Original, UNDATED Figures to be used in a publication? |
| Box 16, Folder 21 | Steam Rockets , UNDATED Includes the paper "Hot Water Rockets, Development and Applications" by RC Truax. |
| Box 16, Folder 22 | Small Sounding Rocket (TEI) - Technical. TEI General, UNDATED |
| Box 16, Folder 23 | Old TEI Documents (Logo, etc.) - Admin. TEI General, UNDATED |
| Box 16, Folder 24 | Proposal Pieces, UNDATED |
| Box 16, Folder 25 | Low-Cost Launch Vehicle - Reference - TEI General, UNDATED |

Box 16, Folder 26 RCT [Robert C. Truax] Bio's, UNDATED

Box 16, Folder 27 [Stationary?], UNDATED

Box 16, Folder 28 Miscellaneous Illustrations, UNDATED

Box 17, Folder 1 Seahorse D (TEI Design) - Technical - TEI General, UNDATED

Box 17, Folder 2 Small Launch Vehicle Options (Air Force) Briefing - TEI General, UNDATED

Box 17, Folder 3 RSLP Business Plan by Space & Missile System Center, UNDATED

Box 17, Folder 4 Color Copies, UNDATED
Color xeroxes of photos of rockets and equipment.

Box 17, Folder 5 NNICBM Brief Charts, UNDATED

Box 17, Folder 6 [A Business Plan for World Spacelines Offered by Truax Engineering, Inc.], UNDATED

Box 17, Folder 7 Propellant, UNDATED

Box 17, Folder 8 TEI - Venus [Vapor-Pressured Expandable Nozzle Upper Stage,] an ASPS Proposal, UNDATED

Box 17, Folder 9 [Aerojet-General Corporation. Sacramento Plant - *Saturated Propellants for Liquid Propellant Rocket Engines* by Truax, Sprow & LaBotz], UNDATED

Box 17, Folder 10 [*Why the Moon... & Beyond. A Synopsis* by Arthur C. Clarke], UNDATED

Box 17, Folder 11 [*Preliminary Design of a 350 lb Thrust Topping Turbine Rocket Engine*], UNDATED

Box 17, Folder 12 Business Cards, UNDATED

Box 17, Folder 13 Space Shuttle News Reference [Manual by NASA], UNDATED

Box 17, Folder 14 [*A Program to Demonstrate the Feasibility of Sea Launch, Recovery, and Reuse of Ballistic Missiles & Space Launch Vehicles*], UNDATED

Box 17, Folder 15 TEI Historical Color Viewgraphs, UNDATED

Box 26 [Miscellaneous Oversize], UNDATED

Rolled drawing removed from "X-3 Center Section" folder in Box 19; "Seahorse" decals; damaged paper articles from Omni, Newsweek, etc.; Truax's BS in Aeronautical Engineering; Group photo of Project Private Enterprise, with signatures, marked 1980; newspaper articles about Truax mounted on cardboard.

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Series 2: Papers Authored by R.C. Truax, 1938-2002

Box 18-19

- Box 18, Folder 1-5 [Miscellaneous Papers/Speeches/Articles by R.C. Truax], 1938-2002
- Box 18, Folder 6 [*The Hydrogen-Peroxide Topping-Turbine Rocket Engine* Article & Drawings by R.C. Truax], Circa 1948-circa 1956
- Box 18, Folder 7 *Means for Making the Guided Missile Submarine A Primary Naval Weapon* by R.C. Truax, CDR. USN, 1955
- Box 18, Folder 8 *Dawn of the Space Age* by Robert C. Truax, Commander, USN, Circa 1955
- Box 18, Folder 9 *Low Pressure Rockets* [Speech/Paper] by Cmdr. R.C. Truax, USN, June 1957
- Box 18, Folder 10 *Rocket Engines for Outer Space* by Cmdr. R.C. Truax, USN, 1957
- Box 18, Folder 11 *From Airlines to Spacelines?* R.C. Truax Papers, Circa 1963
- Box 18, Folder 12 *The Pressure-Fed Booster – Dark Horse of the Space Race* R.C. Truax, TEI, Circa 1968
- Box 18, Folder 13 *End of the Space Age?* R.C. Truax Papers, Dec. 1972
- Box 19, Folder 1 [*The Non-Nuclear ICBM - A Weapons System for the Post Cold-War Era* by Capt. R.C. Truax, USN (Ret.) A Paper Presented at the US Naval Postgraduate School], March 12, 1991
- Box 19, Folder 2 NNOBM [Non-Nuclear Orbital Bombardment] Manuscript, 1991
Paper title: "Non-Nuclear Orbital Bombardment System."
- Box 19, Folder 3 [Draft: *The Real Problem of National Security and A Simple Solution* by R.C. Truax, 8/1/95]
- Box 19, Folder 4 Bob's Papers, 1998, 2001
"The Future of Earth-to-Orbit Propulsion," "Critique of Cellular Rocket Concept," "War Without Wings."
- Box 19, Folder 5 *Critique of the Cellular Rocket Concept* a Paper by R.C. Truax (Unpublished), Rev. 5.0 – Dated 2/99
- Box 19, Folder 6 [*Winged Vs. Ballistic Recovery of Reusable Launch Vehicles* by Capt. R.C. Truax - A Paper Given at the 2000 Core Technologies for Space Systems Conference Nov. 30 - Dec. 1, 2000 Colorado Springs, CO]

- Box 19, Folder 7 Truax Papers, January 2002
This notebook contains a compilation of written documents by Truax during his tour at KACST during Jan 2002.
- Box 19, Folder 8 *Evolution of Pump-Fed Rocket Engines* by R.C. Truax, UNDATED
- Box 19, Folder 9 *Assured Access to Space* by R.C. Truax, TEI, UNDATED
- Box 19, Folder 10 *The Launch Vehicle Crises* [by R.C. Truax?], UNDATED
- Box 19, Folder 11 [*Some Weird Rockets I Have Known* by Capt. R.C. Truax, USN (Ret.)], UNDATED
- Box 19, Folder 12 *Cheap Transportation for Cheap Satellites* by Capt. R.C. Truax, UNDATED

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Series 3: Drawings, 1939-2002*Box 19-21*

- Box 19, Folder 13-14 [Miscellaneous Drawings], 1939-1999
These drawings were found loose in the collection (unlike the other "Miscellaneous Drawings" file unit that Truax named and created.) They include drawings with blank title blocks, drawings created by other companies and some only partially identified TEI drawings.
- Box 19, Folder 15 Forward Section, 1978, ?
- Box 19, Folder 16 X-3 Center Section, 1980
Oversized rolled drawing originally here removed and placed in Box 26.
- Box 19, Folder 17 Historical Prop Valve, 1980
Transfer Sleeve Assembly & Details, Cover Instrument Package SEALAR, Container Instrument Panel SEALAR, and 1 unnamed drawing.
- Box 20, Folder 1 Transfer Sleeve Assembly & Details, 1980
- Box 20, Folder 2 Transfer Sleeve 1005-7 / 1005-22, 1980
- Box 20, Folder 3 Center Section, 1980
- Box 20, Folder 4 Engine Section, 1980-1981
- Box 20, Folder 5 [Missing Label], 1980, 1989
- Box 20, Folder 6-7 Recovery System, 1980-1990
- Box 20, Folder 8 [Temporary Drawing - Round Intake G8-2-130], 1984?
- Box 21, Folder 1 Inflatable Nozzle [Drawings], 1991
- Box 21, Folder 2 My Sketches Vol. II, 1991-1999
- Box 21, Folder 3 Extra Excalibur Drawings, Circa 1996
- Box 21, Folder 4 75K Injector Drawings. Bob's Desktop File - Phase II, 1998
- Box 21, Folder 5 [Drawings for Contract F04701-00-D-0204]
- Box 21, Folder 6 Miscellaneous Drawings, 2002
TEI engine, fuel tank, bracket and unidentified drawings.

Box 21, Folder 7 Project Private 1005-24 / 1005-38, UNDATED

Box 21, Folder 8 Astronaut Section Capsule, UNDATED

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Series 4: Images, 1937-2000

3.6 Linear feet ((1 legal size box, 1 slim legal size box, 3 8x6x12 shoeboxes))
Box 21-25

4.1: Slides, 1937-1999

| | |
|----------------------|--|
| Box 21, Folder 9 | Old Slides, Annapolis to Knievel, 1937-1987 |
| Box 21, Folder 10 | TEI Slides, 1966-1997 |
| Box 21, Folder 11 | [Apollo / Gemini], 1969-1972 |
| Box 21, Folder 12-13 | Project Private Enterprise, X-3 Slides, Circa 1977 - Circa 1985 |
| Box 22, Folder 1 | SEALAR, 1989 |
| Box 22, Folder 2 | 3rd Quarter Status Report, SBIR Phase II (not used in PPT), Circa 1999 |
| Box 22, Folder 3 | [Two Glass Mounted Slides], UNDATED |

4.2: Photos, Negatives & Floppy Discs, 1943-2000

| | |
|------------------|---|
| Box 22, Folder 4 | [Miscellaneous Negatives], 1943-1950 |
| Box 22, Folder 5 | Legion of Merit Ceremony Photos, 1945, 1957 |
| Box 22, Folder 6 | Old Photographs, 1951, 1996 |
| Box 22, Folder 7 | <i>American Spaceline</i> Figures - A Business Plan for Getting Sponsors For Our X-Prize Entry, Sept. 18, 2000 |
| Box 22, Folder 8 | [Miscellaneous 5x7 Prints], UNDATED |
| Box 22, Folder 9 | [Group Photo], UNDATED |
| Box 23-25 | [Photo Prints & Negatives] Evel Knievel, Surface Effect Ship (SE5) Project - 71, SEALAR, SEALAR Days, X-3 Failure, Truax Engineering, Turki Stand Progress 9-29-99, Rancherous Shop, Report 10-26-99, [Misc.], [Misc. Negatives] and [Floppy Discs.] |

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