

RSTS: The Early Days



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Agenda

- A Brief History of Nathan Brookwood
- The Antecedents of RSTS
- The Development Team (RSTS)
- The Development Team (RSTS/E)
- RSTS Evolution
- Early RSTS Customers
- What Happened Next



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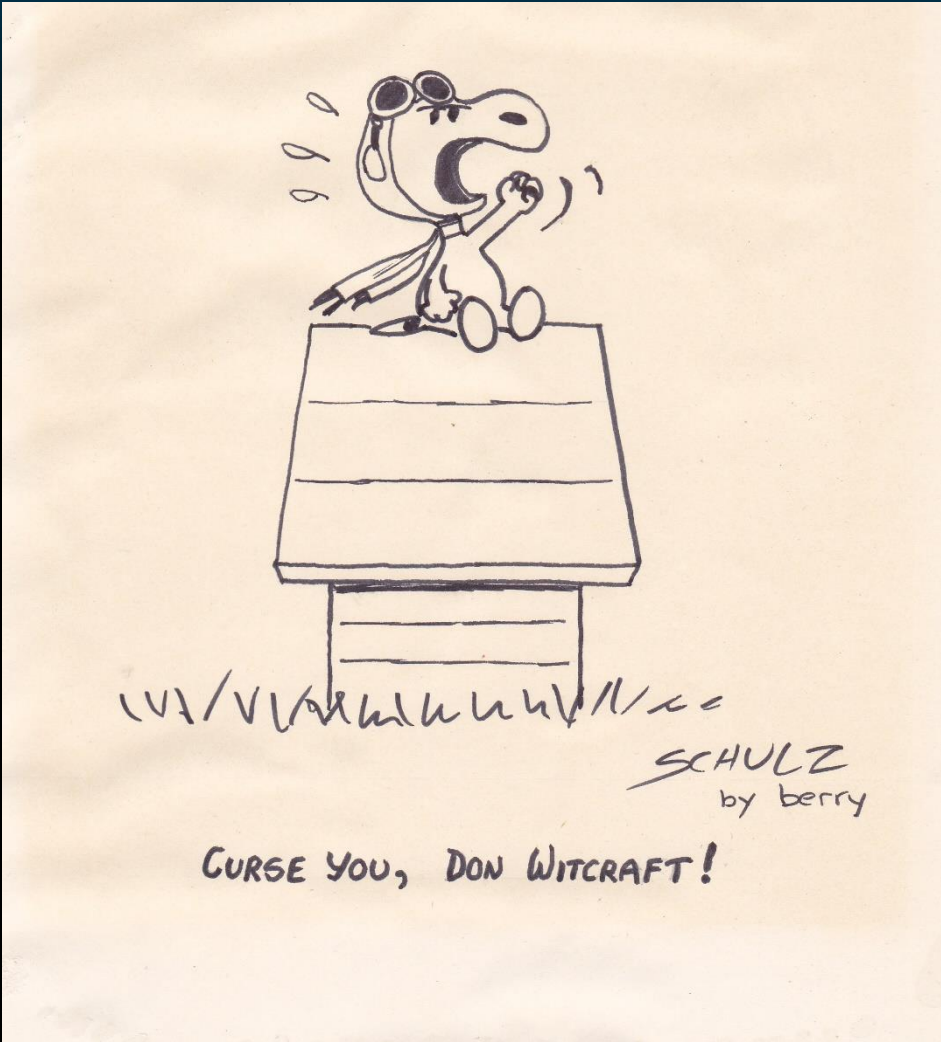
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Nathan Brookwood

- Hired by Larry Portner in 1968 to Complete TSS/8 Development
 - My “Insight 12” Era
- Moved to PDP-11 Marketing in 1970 (My “Insight 16” Era)
- Led the RSTS Project While Based in Marketing
- Ran DECnet Program from 1974-1977 (My “Insight 12/16/36” Era)
- Joined Prime Computer in 1978 (My “Insight 32” Era)
- Migrated to Silicon Valley in 1982
 - Convergent Technologies (1982-1986)
 - Rebranded “Nate Teichholtz” as “Nathan Brookwood” (1984)
 - Intergraph (1986-1993)
 - Micronics (1993-1995)
- Switched From “Doing” to “Analyzing” in 1995
 - DataQuest/Gartner (1995-1998)
- My Insight 64 Era (1998-Today)



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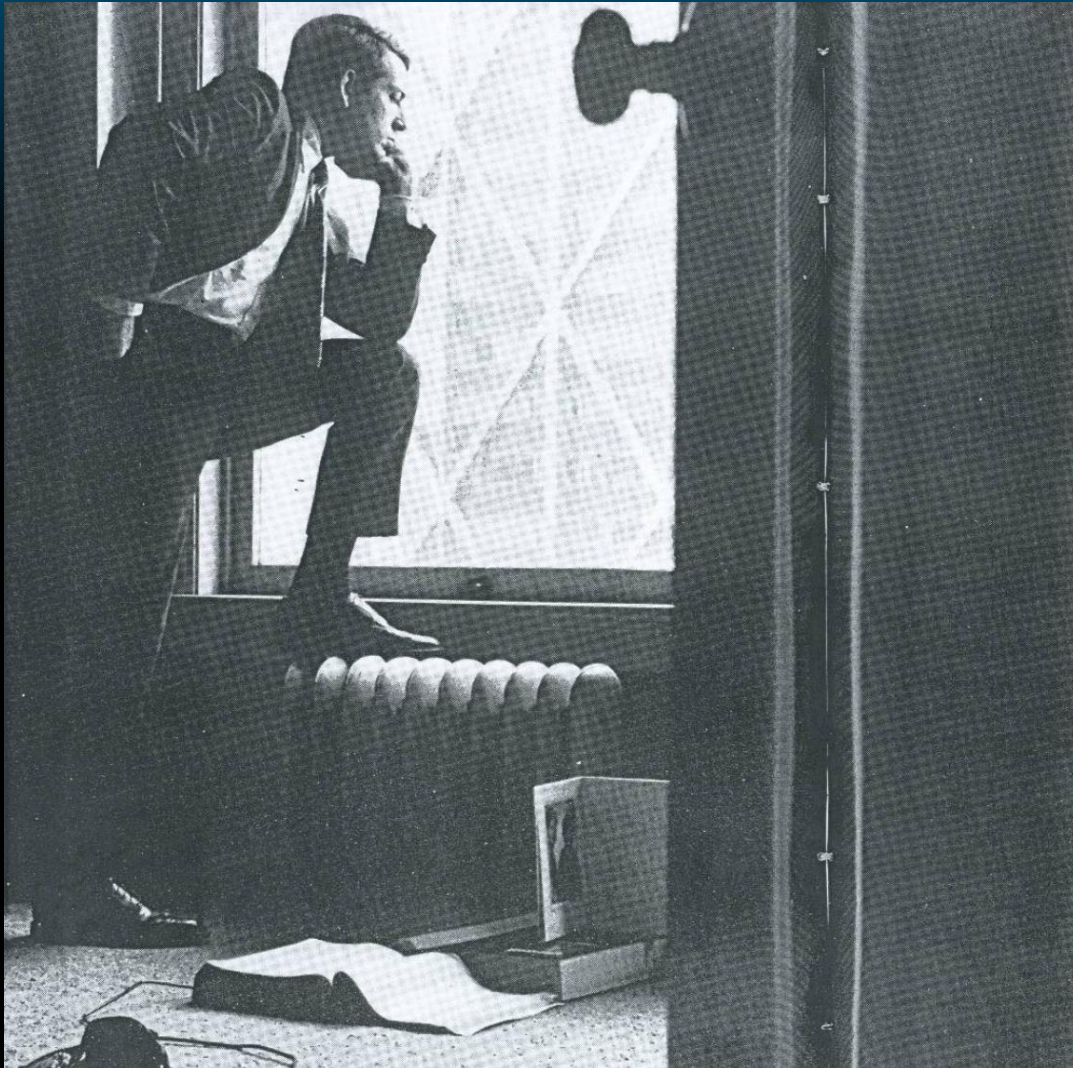
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The Antecedents of RSTS

- TSS/8
 - General Purpose Time Sharing (Basic/Fortran/Assembler)
 - Jack of All Trades, Master of None
 - 24K – 32K Core Memory / RF 08 256K Hard Drive
 - Great for Education Markets, but Not for Serious Jobs
- HP-2000A
 - Basic Only Timesharing with Enriched Basic
 - Good for Low-End Commercial Tasks





If you had ordered our time-share system

you'd be in business today.

While you wait, counting the passing weeks, the missed opportunities, you could have had the extraordinary HP 2000A Time-Share system installed and working.

Delivery is only a matter of months.

The system is priced at \$90,500 yet will match power and flexibility with systems costing considerably more. And you can have 16 remote terminals going simultaneously.

Another nice thing, your users don't have to be master programmers. HP BASIC is the closest thing to conversation, so simple it can be learned in just a few hours. Our system is easy to get on the air, comes completely equipped with teleprinter and data phone interfaces, plus all custom software. Down-time—forget it!

Users—especially engineers and scientists—like our line-by-line error check conversational mode. No busy signals; no wait messages; simplified debugging.

Why wait? If you're a business man in a hurry, call the nearest HP computer specialist. Or write Hewlett-Packard, Palo Alto, California 94304; Europe: 1217 Meyrin-Geneva, Switzerland.

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Original RSTS Development Team

- Me (On Loan from Marketing) OS and Drivers
- Tom Barnett (Marketing) Product Management
- Dave Knight (Software Dept) Floating Point Library
- Jeff (Software Dept) Push-Pop and Runtime
- Evans, Griffiths and Hart (EG&H) Basic-Plus

“RSTS has traditionally run with a very small development staff”

--David Stone, Director, Software Dev.



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RSTS Wasn't Always RSTS

- Original Product Name Was BTSS
 - Basic Time Sharing System
 - Evocative of MIT's CTSS
 - (Compatible Time Sharing System)
- A Trademark Search Revealed RCA Owned the Mark “BTSS”
- Shortly After DEC Launched RSTS, RCA Exited the Computer Business 😞



- Three-Man Software Shop in Lexington MA
 - Tom Evans (PhD MIT)
 - Tom Griffiths (SM MIT) TECO and Garbage Collector Expert
 - Tim Hart (SM MIT)
- Mostly Known for Their AI Work at MIT (LISP)
- They Were Struggling Financially in 1971
- They Bid \$30K for Project (To Stay in Business)
 - TomG (Basic-Plus Front-End (“Lexical Analyzer”))
 - Tim H (Push-Pop Code Generator and I/O)
 - TomE (Architecture and Integration)
- RSTS Fueled Their Growth for ~ 20+ Years



The Development Team (RSTS/E)

- By Early 1973 I was Burned Out and Retired to Marketing
- Mark Bramhall Picked up RSTS/E Development
 - Quadrupled Main Memory Support to 128KB
 - Added Hardware Floating Point Support
 - Expanded File System to Support RK11 Drives
 - Added Multi-Language Support
- In 1975, Jackie Pakarinen Appointed Development Manager
 - “With each release, performance improved as more of Nathan’s code was replaced” – Jackie Pakarinen




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RSTS Evolution

- Version 1 -- Never Released
- Version 2 -- First “High-Volume” Release
 - Auto Restart
 - Ability to Crash an Individual User
 - “Catastrophic Error - Program Lost Sorry” 
- Version 3
 - Record I/O (Get/Put with Primitive Update Control)
 - Last Non-Memory Mapped Version





Early RSTS Customers

- Today We Would Call These “Beta Test” Sites
 - But Neither We Nor They Knew It at the Time
- Carleton College (Minnesota)
- Delaware School Auxiliary Association (DSAA)
- Northfield Mount Herman School (Massachusetts)
- Lawrence University (Wisconsin)
- Continental Can
- Prudential Life Insurance



What Happened Next

- In 1974, I Moved to Software Engineering
 - Led Definition of DECnet Strategy and Program
 - Coordinated Development of
 - DECnet 8
 - DECnet 11
 - DECnet 10/20
- In 1978 I Moved to Prime Computer
 - Led Definition of PrimeNet
- In 1982 I Moved West to Convergent Technologies
 - Coordinated Introduction of CT-Net



Summary

- I Didn't Appreciate DEC's Strengths Until I Left the Company
 - Allowed Inexperienced Managers to Lead Big Projects
 - I Started RSTS When I was Only Three Years out of School
 - I Didn't Know What I Didn't Know
- DEC's Lack of Process Was A Strength and a Weakness
- Gee, I Miss It Now



Additional Resources

Silverware Ltd, The Courtyard, Sulhamstead Abbots,
Reading RG7 4EE

[RSTS 80th Birthday \(silverware.co.uk\)](http://www.silverware.co.uk/rsts_80th_birthday.htm)

http://www.silverware.co.uk/rsts_80th_birthday.htm



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