

# The Origins of FORTRAN

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I must confess that my title is somewhat misleading. While there is a little about FORTRAN in the 1950s this talk is mainly an introduction to the 1982 IBM film of interviews with John Backus and colleagues.

In late 1953, John Backus sent a brief letter to his boss at IBM, asking that he be allowed to search for a "better way" of programming computers, with a project timescale of six months. He got the nod and began the research project that would eventually produce FORTRAN.

As John Backus says in the film, “project completion was always six months away”!

# **FORTRAN Announced**

FORTRAN, the first high level programming language, was announced to the computing world by John Backus and his team from IBM at the Western Joint Computer Conference held in Los Angeles, California in February 1957

# John Backus' team in the late 1950s



The photo on the previous slide is a very small image taken from the on-line version of a New York Times article by Steve Lohr from June 13, 2001 entitled "Pioneers of the 'Fortran' Language".

A copy of the article is available at [www.fortran.bcs.org/2001/pioneers.html](http://www.fortran.bcs.org/2001/pioneers.html)

(c) New York Times 2001

In mid-April 1957 the first documented delivery of the FORTRAN compiler for the IBM 704 took place to Westinghouse-Bettis for use in nuclear reactor design







Previous slide

Photo of an IBM 704 mainframe, courtesy of Lawrence Livermore National Laboratory, which I found on Wikipedia.

Next slide

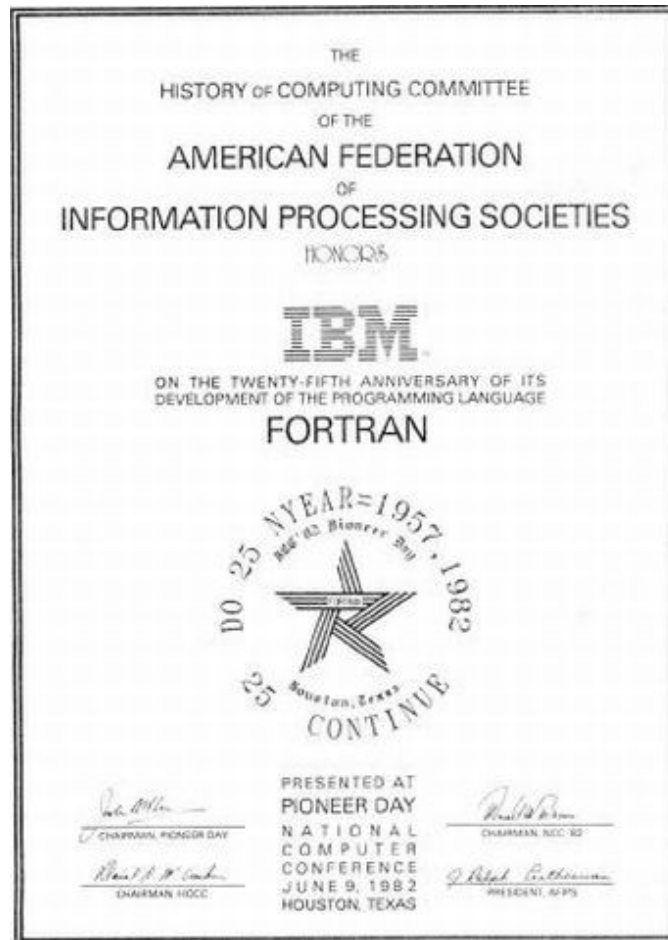
The following anecdote is taken from "FORTRAN Anecdotes", H.S. Troop, Annals of the History of Computing, Volume 6, Number 1, Page 59, January 1984.

Frank Engel of Westinghouse, Pittsburg was concerned about the efficiency of the tape operations with the first FORTRAN compiler. He asked IBM if he could have a copy of the source code. They replied "IBM does not supply source code." So Frank worked his way through an octal dump of the compiler and optimised the tape operations. The improvement so impressed IBM that they asked for a copy of the code, to which Frank replied "Westinghouse does not supply source code."

More information on the background and development of the FORTRAN I, II and III compilers can be found on the FORTRAN pages of the Computer History Museum website, maintained by Paul McJones at <http://community.computerhistory.org/scc/projects/FORTRAN/>

Pioneer Day was celebrated on June 9 1982 at the National Computer Conference, held in Houston, Texas, to honour the 25th anniversary of the delivery of the first FORTRAN compiler.

The proceedings were reported in a Special Issue of the Annals of the History of Computing, Volume 6, Number 1, January 1984.






Certificate Logo

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NCC '82 Pioneer Day  
Houston, Texas



 <p>The 25th Anniversary of <b>FORTRAN</b> June 9, 1982 <b>Pioneer Day</b> 1982 National Computer Conference 1:45 p.m. The Early Days of FORTRAN 3:30 p.m. The Institutional- ization of FORTRAN</p>	<p><b>FORTRAN</b> —“the infantile disorder”— is hopelessly inadequate for whatever computer application you have in mind today . . . too clumsy, too risky and too expensive. —Edsger Dijkstra</p>
<p><b>FORTRAN</b> is a collection of Warts, held together by bits of Syntax. —Anon.</p>	<p>God is Real (unless otherwise declared in an explicit type statement or in an implicit declaration). —B. Graham</p>
<p>The one central attribute of <b>FORTRAN</b> is its name —Martin Greenfield</p>	<p>I don't know what the language of the year 2000 will look like but I know it will be called <b>FORTRAN</b> —Tony Hoare</p>
	<p><b>FORTRAN</b> is a language to avoid —unless you want some answers —Anon.</p>
	<p>In the good old days, physicists repeated each other's experiments, just to be sure, Today they stick to <b>FORTRAN</b> so they can share each other's programs, bugs included. —Edsger Dijkstra</p>

Sayings from cards distributed at Pioneer Day

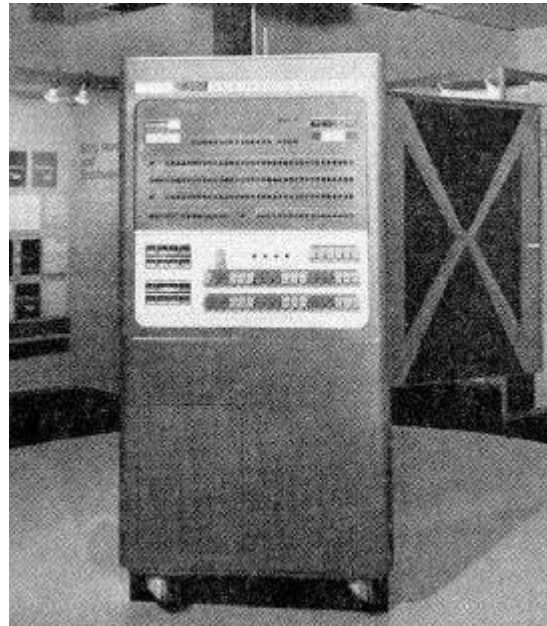




# IBM FORTRAN Exhibit and Film

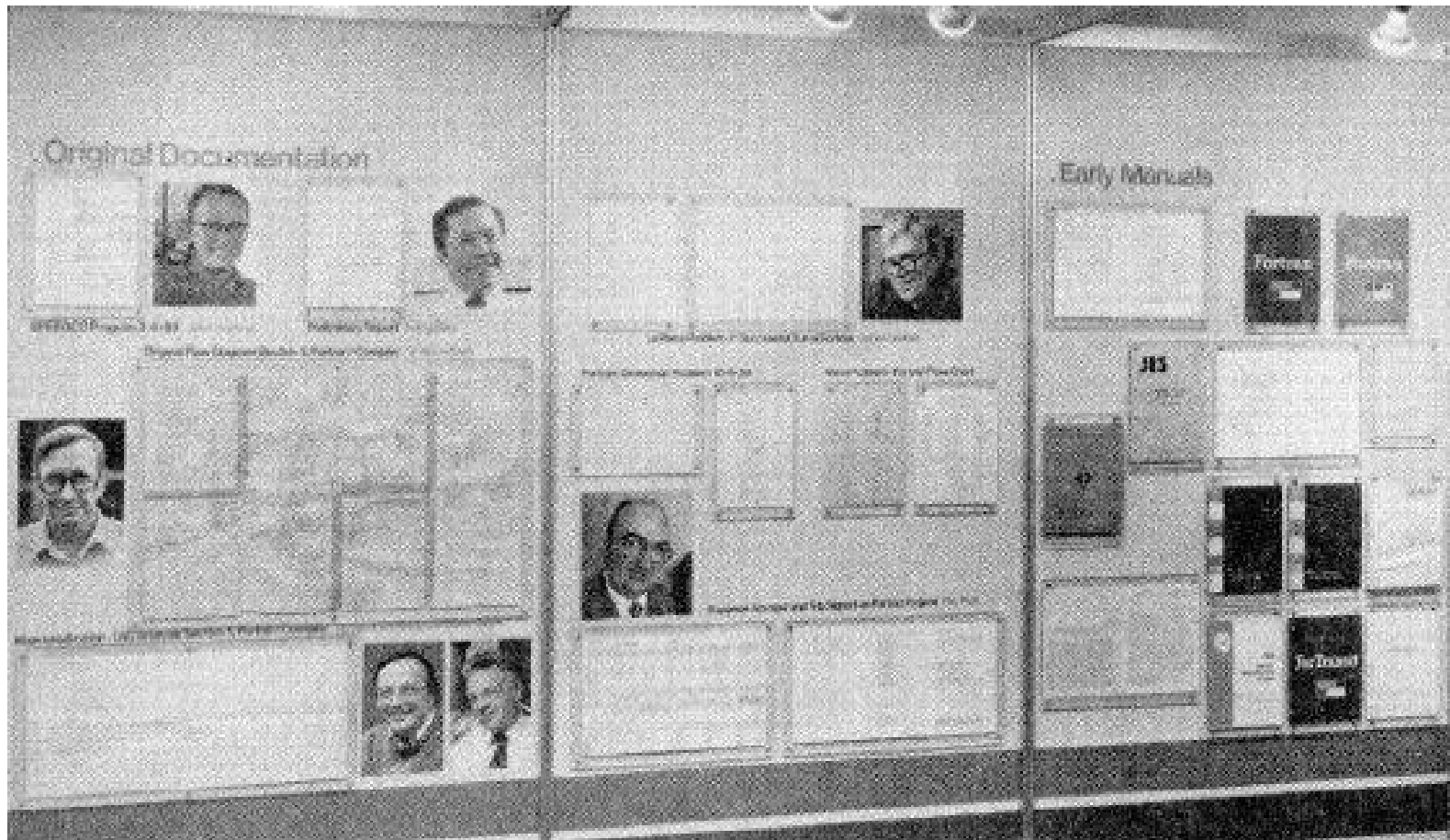
Most of the following images and information are taken from the article with the above title by Daniel Leeson published in the Annals of the History of Computing Volume 6 Number 1, page 41, January 1984

# Centre piece of the Exhibit - an IBM 704 CPU

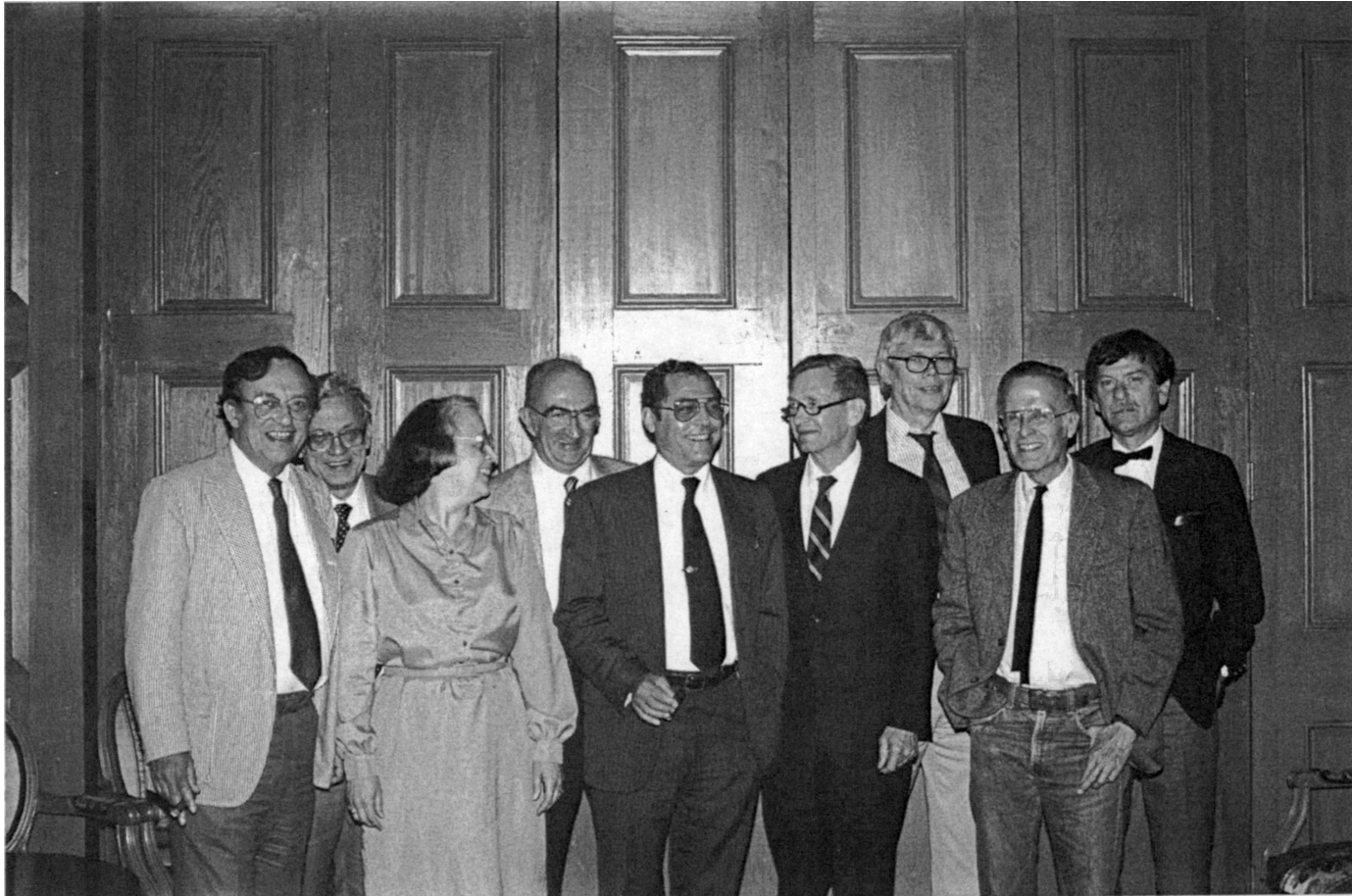




Pioneer Day, 1982. Standing, from left: John Backus, Sheldon Best, Robert Nelson, Irving Ziller. Seated, from left: Richard Goldberg, Lois Haibt, Roy Nutt.







## Photo caption

The photo on the previous slide was taken at the Pioneer Day Banquet, National Computer Conference, Houston, Texas, June 9, 1982.

From left: Richard Goldberg, Robert Nelson, Lois Haibt, Roy Nutt, Irving Ziller, Sheldon Best, Harlan Herrick, John Backus, Peter Sheridan.

From the FORTRAN pages of the Computer History Museum website.

A copy of the IBM film in Windows Media Video format at 320 x 240 pixels resolution with a file size of 12.8 MB can be downloaded from the FORTRAN pages of the Computer History Museum website.



My grateful thanks go to Paul McJones of the Computer History Museum, Mountain View, CA, for providing me with much of the information I have used for this presentation and especially for the DVD version of IBM's 1982 film, which will be shown at the end of my talk.



# My 50th Anniversary Homage

INTEGER YEARS, FILM

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