

[French, R. M. (2004). For historians of automated computing only: A review of *Who Invented The Computer? The Legal Battle That Changed Computing History* by Alice Rowe Burks. *Endeavour*. (in press).]

For historians of automated computing only: A review of
Who Invented The Computer? The Legal Battle That Changed Computing History
by Alice Rowe Burks¹.

Robert M. French
Quantitative Psychology and Cognitive Science
University of Liege, Liege, Belgium
email: rfrench@ulg.ac.be

The Myth of who invented the computer, as described in Alice Burks' book, goes something like this. Struggling to develop a special-purpose electronic computing machine, John Vincent Atanasoff is at an impasse. He takes a 200-mile drive at high speed in the winter of 1937, stops at a roadside tavern, and after a couple of bourbon-and-waters, solves his problem, thus giving birth to the Computer Age. This brilliant, but naive, scientist freely shares his revolutionary ideas with an evil house-guest, John Mauchly, who purloins them. Based partly on Atanasoff's ideas, Mauchly and co-conspirator J. Presper Eckert build ENIAC, falsely billed as the world's first electronic computer. Mauchly and Eckert become world famous and Atanasoff, devastated, is forgotten. But, as luck would have it, a patent infringement trial thirty years later allows the modest Atanasoff to convince Judge Earl Larson that he, not Mauchly or Eckert, is the rightful Inventor of the Computer. The judge finds in favor of Atanasoff and the ruling goes unchallenged. David has slain Goliath; the Underdog has won the day. The End.

The problem is that the story of who invented the computer – which, ostensibly, is what this book is about -- is far more broad and complex than the Myth.

The present book focuses narrowly on the 1971 court case between Honeywell and Sperry-Rand that brought Atanasoff to the public eye. The book's use of the transcripts of that court case to defend Atanasoff as the inventor of the first special-purpose electronic computer is meticulous in the extreme – at times, excessively so – and will, no doubt, prove to be a valuable tool for future historians of automated computing. The meat of Burks' book is found in the first section (“Nothing But the Truth”) in which Mauchly's and Atanasoff's testimony and cross-examination are presented along with Judge Earl Larson's findings as to exactly why he found the ENIAC patent invalid. The message from the bench was as clear as it was significant, viz., the invalidation of the ENIAC computer patent was justified because of prior work done by John Atanasoff and his graduate student, Clifford Berry, and knowingly incorporated into the ENIAC patent without crediting either Atanasoff or Berry. A single confusing point in Larson's decision — namely, that parts of the ENIAC patent were based on prior work done by Atanasoff, thus invalidating the patent, while still maintaining that Mauchly and Eckert were the co-inventors of ENIAC — is clearly explained to the reader.

That said, with the exception of chapter 9 on Von Neumann's role in the development of the computer, the remainder of the book after the first section can be put aside. It is mostly, if not exclusively, a tedious description of personal disputes and problems with one adversary after another. The size of this book could, without difficulty, have been reduced by half.

¹ *Who Invented The Computer? The Legal Battle That Changed Computing History* by Alice Rowe Burks, 463 pp., Prometheus Books, 2003, ISBN: 1-59102-034-4

Unfortunately too much of Burks' book reads like a grudge match against Mauchly and, to a lesser extent, against Eckert, and any who would dare defend them. For example, thirty years after the fact, Mauchly, whose testimony clearly reflected his lack of preparation for the trial, claimed to have come up with certain ideas in the spring of 1941. Burks writes: "It was these ideas that Mauchly...backdated to the spring before his visit to Atanasoff's laboratory, *so as to claim that what he learned there was of no interest to him* [my italics]." How does she know this? The reason for Mauchly's backdating error could also (plausibly) have been that three decades had passed and he was simply mistaken. Burks also tells us: "As for the oft-promised disclosure [by Eckert] of untapped – and mysteriously secret – evidence, *the truth is that there is no such evidence* [my italics]." Again, just how does the author know this?

Further, in any discussion of who invented the computer, names like Charles Babbage, Alan Turing, Howard Aiken, George Stibitz, and, especially, Konrad Zuse, should have been mentioned in more than the most cursory possible manner in which we find them in this book. Atanasoff invented the first binary, special-purpose computing device using electronic components. Konrad Zuse in Germany completed a mechanical device in 1938 that was binary, general-purpose, programmable, had a separate memory and process controller and could do floating point arithmetic. In 1941 Helmut Schreyer, a friend who worked with Zuse, proposed using vacuum tubes instead of electromechanical relays and a year later built a simple machine based on these principles (Rojas, 1997, 2000; Ceruzzi, 1983). But in *Who Invented the Computer* the entire German contribution to the invention of the computer is reduced to approximately a single page in a 450-page book. Whether or not it had any impact on the American (or British) computer development efforts is beside the point. In a book on who invented the computer, this information should have been included.

Finally, Burks frustratingly leaves essentially untouched one of the most important questions surrounding the Atanasoff story – namely, why did it take Atanasoff three decades to come forward and object to Mauchly stealing his ideas? Burks simply suggests that Atanasoff was "devastated ... by the news of the ENIAC and Mauchly's word that its principles were entirely different from [Atanasoff's computer]." (p.412). But, in fact, Atanasoff had much more than Mauchly's word to go on. It is clear that Atanasoff had to have been intimately aware of the design of ENIAC from its inception (McCartney, 1999, p. 206-211). But then why did he never challenge Mauchly and Eckert before 1971? This major question goes unanswered.

In short, while this book provides a thorough treatment of *Honeywell vs. Sperry-Rand* and Atanasoff's contribution to the modern computer, it is certainly not the place for a lay reader to find out about who invented the computer, as its title claims.

Acknowledgments

The author would like to thank Charles R. French, attorney-at-law, for his help with various legal issues involved in *Honeywell vs. Sperry-Rand*.

References

- Ceruzzi, P. (1983). *Reckoners: The prehistory of the digital computer from relays to the stored program concept, 1939-1945*. Westport, Conn.: Greenwood Press.
- McCartney, S. (1999). *ENIAC: The triumphs and tragedies of the world's first computer*. New York: Walker & Co.
- Rojas, R. (2000). "The Architecture of Konrad Zuse's Early Computing Machines", In R. Rojas and U. Hashagen (eds.) *The First Computers - History and Architectures*. Cambridge: MIT Press. pp. 237-262.

Rojas, R. (1997). "Konrad Zuse's legacy: the architecture of the Z1 and Z3", *Annals of the History of Computing*, 19(2), 5-16.