

Tribute to a Project Management Pioneer

John Fondahl: 1924 - 2008^{1, 2}

John Fondahl, PMI Fellow, Professor Emeritus in the Department of Civil and Environmental Engineering at Stanford University in Palo Alto, California has passed away on 13 September 2008 in California. One of the early pioneers of modern project management, John Fondahl was an active participant in the startup and early days of the Project Management Institute (PMI) and the construction management profession in the United States.



According to the official obituary published in Los Altos, California:

“John Walker Fondahl passed away September 13, 2008 from melanoma cancer at home with his family at age 83. John was born on November 4, 1924 in Washington D.C. He met his future wife, Doris-Jane Plishker, in 1939 at McKinley Tech. He graduated valedictorian in 1941. He entered Worcester Polytechnic Institute. After Pearl Harbor, John joined the US Marine Corps, serving in the Pacific Theater in the Fifth Amphibious Corps. Both he, a sergeant, and his father, a Lt. Colonel in a different outfit, were Iwo-Jima survivors. Upon returning from the Pacific, John received a

scholarship to Dartmouth College. He married Doris in 1946. John received his MS in civil engineering from Dartmouth in 1947.

John worked as an engineer with the American Bridge Company in Pittsburg, PA in 1947 - 48, taught civil engineering at the University of Hawaii from 1948 to 1951, and moved to Sacramento to work with Winston Brothers and the Al Johnson Construction Company as project engineer on the Nimbus Dam from 1952 to 1955. In 1955 he became a professor of civil engineering at Stanford and co-founded the

¹ *Editor's note: Second Editions are previously published papers that have continued relevance in today's project management world, or which were originally published in conference proceedings or in a language other than English. This tribute was originally published in the October 2008 edition of PM World Today, which is no longer online. It is being republished so that John's story is not lost and can be archived in the History of Project Management section of the PM World Library at <https://pmworldlibrary.net/ppm-profession/>*

² How to cite this paper: PM World Today (2008). Tribute to a Project Management Pioneer – John Fondahl: 1924 - 2008; originally published in the October 2008 edition of PM World Today; republished in the *PM World Journal*, Vol. XII, Issue I, January.

Construction Management Program. He taught at Stanford for 35 years, retiring in 1990, and served as the first Charles H. Leavell Professor of Civil Engineering.

He was recognized worldwide as an expert on the Critical Path Method for construction management, was a founder of the Project Management Institute (PMI), and president of the Construction Data Systems Corporation. John's "Non-Computer Approach to the Critical Path Method for the Construction Industry" sold over 20,000 copies in 20 languages. John taught construction management courses worldwide.

He served on the boards of Caterpillar and Scott Co. He received the Golden Beaver Award for Heavy Engineering Construction in 1975, was elected to the National Academy of Engineering (NAE) in 1993, and to the National Academy of Construction (NAC) in 2001. The family has lived in Los Altos Hills since 1965. John and Doris have been long-time supporters of local theater groups including Bus Barn, ACT and Theaterworks. John always enjoyed sharing a bottle of Ridge wine with his family. Upon retirement, John became a full-time gardener and producer of soups, jams and preserves. John loved Lake Tahoe and hikes to Crag Lake. John and Doris loved traveling worldwide.

Throughout his life people noted his integrity, his stoicism, and his wisdom to stay quiet until he had reflected on matters of importance. John is survived by his wife of 62 years, Doris, daughters Lauren, Gail, Meredith and Dorian, son-in-laws Ken Bilski and Joe Martinka, David Wickline, and grandchildren Gwynne Bilski and Arielle and Peter Martinka. A memorial will be held at the Stanford Memorial Church 4:00 pm October 28th. Donations may be made to the John Fondahl Fellowship, Stanford University, P.O. Box 20466, Stanford, CA 94309."

Here are some additional notes and tributes received since learning of John's passing:

According to PMI's Hall of Leaders website, "**John W. Fondahl** was one of the earliest members of PMI, becoming active in 1969. He has served as Vice President, Director-at-Large, President from 1974 to 1975 and Chairman of PMI from 1976 to 1977. Active in the PMI Northern California Chapter, Mr. Fondahl currently serves as a member of its Advisory Committee. He has presented several papers and served on numerous panels at both the global and chapter levels. He was made an Honorary Life Member of PMI in 1981."

The Construction Engineering and Management program at Stanford University was formed in 1955 by Professors Oglesby and Fondahl, and offered one of the first graduate degrees in construction management. John Fondahl developed the Precedence Diagramming Methodology in 1961 as a 'non-computer' alternative to CPM.

According to John's own writing, "The networking method which later came to be called PDM was initiated on 1 July 1958, with the award of a research contract by the

US Bureau of Yards and Docks to Stanford University's Civil Engineering Department, essentially tackling the same type of 'time-cost tradeoff' problem as du Pont and the US Navy were already involved in. However, Stanford University's John Fondahl, who led their effort, did not become aware of these other efforts until mid-1959, by which time his 'circle and connecting line' model (later called "activity-on-node" networks, which describes their configuration) had been developed to a point where he assessed that it was simpler than the other models" (Fondahl, 1987).

The report "A Non-Computer Approach to the Critical Path Method for the Construction Industry" (Fondahl, 1961) was published in November 1961. In the proposed time-cost procedure he featured the use of 'Precedence' matrices and utilised the concept of "Lag" values. Fondahl's method came to be termed "precedence diagramming" from around 1964. (**Allen Stretton**, A Short History of Modern Project Management, 1993)

According to **Russ Archibald**, PMI Fellow and co-founder of PMI who also knew John during the early years of PMI, "John Fondahl spoke at the founding meeting of PMI, on October 10, 1969. He was PMI member number 12. He was a very good man, quite influential and a strong supporter of PMI."

According to **Bob Gillis**, PMI Fellow and colleague of John's in British Columbia, "He was in the PMI Hierarchy during my term as Chairman of the 1976 Symposium in Montreal. I remember him as a real gentleman in the best sense of that word, and extremely dedicated to the advancement of PMI. After 36 years, I still remember sitting at the head table with John and his sweet wife at the Symposium luncheon - and the great pleasure I got from that interaction. I also remember that John hosted Steen Lichtenberg from Denmark, a very close friend of mine from the INTERNET(IPMA) board, in university exchange visits a couple of times. Steen always spoke very kindly of their relationship. PMI is extremely fortunate to have had such outstanding pioneers and John was a leader in that group."

According to **Patrick Weaver** in his "Brief History of Scheduling" paper: "In 1961 Professor John Fondahl published a report entitled 'A Non-computer Approach to Critical Path Methods for the Construction Industry'. This paper described the PDM system of scheduling and was offered as an effective manual process to bypass the expensive computer-based CPM system. Fondahl, as part of a Stanford University team, was commissioned by the US Navy's Bureau of 'Yards & Docks' in 1958 to investigate ways of improving productivity. One key deliverable from this work was his seminal report: 'A Non-computer Approach to Critical Path Scheduling' published in 1961. This report sold over 20,000 copies."

According to **Dr. Martin Barnes**, another PM pioneer in the UK who also knew John, "John Fondahl was the leading figure in the early days of what we now call project management both as researcher and teacher. I first came across his work in 1968 and had the great thrill of spending a day with him at Stanford when I was on a tour

of the U.S. researching aspects of construction management in the summer of 1971. I remember vividly what a tremendously stimulating day it was - and how hot it was. We stayed in touch until he retired. A great man and a friend." (Martin Barnes, President, The Association for Project Management, Cornbrash House, Kirtlington, Oxfordshire, United Kingdom)

Bob Youker, who followed John's early writing during Bob's work with the World Bank, has written, "I went to my basement to see what Fondahl books I had. M. Handy of UNIDO, in Vienna had him write a book, "Programming and Control of Implementation of Industrial Projects in Developing Countries", a basic CPM booklet in 1971. The biography lists, 'Fondahl J. W. (1962) A non-computer approach to the critical path method for the construction industry.' I became quite involved with Planalog, a non-computer approach using the precedence approach."

Gui Ponce de Leon wrote, "As a graduate student at the University of Michigan, in the fall of 1967, Professor Harris used the Moder and Phillips and Fondahl's monogram as the texts, with the caveat that he predicted that the Fondahl precedence notation would displace arrow diagram, which at the time seemed so outlandish! After graduation, I was recruited to teach critical path by an alma mater and I used Fondahl's text for the next 17 years. Truly to me, Professor Fondahl was larger than life." (Gui Ponce de Leon, President PMICOS, CEO/Managing Principal PMA Consultants LLC.)

The nicest tribute has come from **Stu Ockman**: "I did know John personally and very well. It started in 1967-1968 when I was a student of his at Stanford. I next saw John at PMI's first seminar/symposium in Atlanta in 1969 where he was one of six invited speakers. A classmate of mine and I took John out to dinner that night. Over the years, we got together for lunch when I visited the Bay Area, both at the faculty club (John's treat) and at local restaurants (my treat). I still have some notes from chatting with John a few years ago that I'd like to share with you and your readers. They start in 1961 when John wrote an article for AGC (Association of General Contractors) Magazine:

A Mauchly guy by the name of Berman had said that you needed a computer to do CPM scheduling. John said in his article, "No, you don't need a computer." As a result of this article, John was invited to talk to the AGC. He went on to write *A Noncomputer Approach to the Critical Path Method for the Construction Industry* (published in 1962) which I first came across being used as the text for a scheduling course taught at the University of Michigan in 1966.

John jumps back to 1958 to a contract he and/or Stanford had with the Navy Bureau of Yards and Docks to perform a time-cost tradeoff analysis for work at the Charleston Dry-dock. John, together with an industrial engineer on sabbatical from Dupont, used industrial engineering flow chart techniques to depict the schedule with a circle

(depicting each activity) and connecting line (for each logic tie) diagram. Later, Zachry Construction Corporation developed a program incorporating overlapping activities with lead and lag factors and Zachry/IBM coined the term, *Precedence Diagramming*. And, the rest is history.

John was a terrific mentor and friend, and his passing is a real loss that will be felt by all who knew him. I'm happy that the PMI College of Scheduling had the opportunity to honor him at our fourth annual conference in Vancouver last year (fittingly celebrating the 50th anniversary of CPM scheduling) as our third recipient of the *Jim O'Brien Lifetime Achievement Award*. His acceptance speech left the attendees in awe of John's contributions to the industry throughout his career. Sadly, we have no recording, but I'm pretty sure we could dig up some pictures, if you'd like." (Stuart Ockman, Former PMI Director and Chair of PMI's College of Scheduling, Philadelphia, Pennsylvania, USA).

The annual ***Jim O'Brien Lifetime Achievement Award*** was presented to Stanford University Professor John Fondahl, who was part of the team that invented precedence diagramming, by the PMI College of Scheduling (PMICOS) at their annual conference in 2007.

(photo: John Fondahl at podium, retelling some of those stories, after receiving award from the PMI College of Scheduling in 2007; photo courtesy of Frederic L. Plotnick, Esq. P.E.)



A member of the "Greatest Generation" John Fondahl was a 20-year-old staff sergeant in the Fifth Amphibious Marine Corps when he landed on Iwo Jima during the battle for the Pacific in World War II. From the base of Suribachi, he watched the men with the flag as they climbed the hill and saw them raise it. We salute Professor **John Fondahl**, his life and contributions to the world of project management.