INTERVIEWEE: C. Norman Winningstad (cont.) DATE: 13 March 1996

TAPE # 2 SIDE A

Counter	Subject discussed	Names
009	Reasons for leaving TEK	
018	Marketing by TEK of Information Display Devices	
023		Earl Wantland
027	Norm's dept. not meeting sales budget	
033	Leave of absence to go to PSU/MBA program	
035	During 1970 concept of computers for a new company	
041	New company needs a president & considerable money	
042	Norm sells TEK stock to start Floating Point System	
063	Interest in aviation, twin engine plane & helicopter	
072	Getting pilot ratings	
078	Investment in early 1980s in company doing mercy flights	
098	Explanation of need for floating point calculating machine	
113	Double precision integer	
145	Capabilities of expensive mini-computers vs $5000 FP box	
161	Competing companies developing a floating point system	
168	FPS developed hardware approach, Digital Equipment developed a 'firmware' approach, therefore no patent infringements	
180	The hardware approach was faster	
190	FPS expected 100% growth, reality was 10% because of a limited market	
202	Size of the FPS hardware	
223	New product line appears - the array processor; Arab oil boycott led to extensive geophysical exploration & array processor could handle vast amounts of input data	
240	Explanation & development of array processor, does its job by applying an algorithm	
344	AP120B is first version of array processor	
359		Dr. Glen Culler
387		Dr. George O'Leary
388	O'Leary designed early version of array processor FPS developed for Control Data Corp	

END OF TAPE 2, SIDE A

TAPE 2 SIDE B

Counter	Subject discussed	Names
010	Need to redesign Culler's processor	
018	FPS did not follow MIT plans, thankfully	
050	Explanation of why FPS's array processor was so successful, FPS "had the market"	
068	Change in management & ownership of FPS 1973-4	
070	Reasons for leaving	Bob Carter
074	Prince leaves because of drug problem	Tom Prince
080		Frank Bouten
082		Dr. G O'Leary
082	O'Leary is physics professor at OR Grad. Inst.	
092	O'Leary joins FPS, is more successful than Bouten in designing interface for array processor & Bouten leaves	
104		O'Leary/Bouten
112	Financial problems at FPS	
130	Norm mortgages house, sells some of his toys	
145	Staying in Oregon vs going back to Cal.	
158	Number of FPS employees varies from 50-100	
182	More on finances & mortgage	
244	FPS is an "assembler" company, not a manufacturer	
286	Winningstads move to Cooper Mt. in 1970	
310	Computer Aided Tomography (CAT scan) is similar to seismic measuring, FPS moves into new market	
335	Competing companies are getting their CATs from FPS	
390	MBA program at PSU (this part on original tape, but not on duplicate)	

END OF TAPE 2, SIDE B

HISTORY OF THE INTERVIEW

C. Norman Winningstad, 1996

There was a genuine interest on part of the staff at the Historical Society to revive the Oral History Program that had been so successful during 1978. Barbara Doyle met Norm Winningstad at an Oregon Pilot's Association dinner on 2 February 1996. A brief discussion about the Historical Society, our interest in oral history interviews and a priority interest in obtaining information about the hi-tech industries led to an exchange of business cards and an agreement by Norm to be interviewed by B. Doyle. Norm was very receptive, tried to fax (on Sunday, 4 February) info about time and place for the meeting. Within a week, time and place for the interview were determined.

Instead of one session, there were five one-hour sessions spread over approximately eleven weeks, all held at the Winningstad's condo in the Sylvan area. Norm was sent (via fax) a list of topics prior to the sessions. He followed the list quite well, provided extremely good explanations of technical topics, showed himself to be a "tech-weenie" (his words) with a wide range of intellectual, business and scientific interests. Norm is very articulate, has good concentration skills and is able to return to his statement at precisely the point where he left off (there were only a few interruptions). The interview topics generally follow the actual sequence of events. The collapse of Floating Point Systems and Norm's minor business interests are the major digressions from a straight chronology.

He understands his position as both a minor venture capitalist and a community philanthropist - there is a need to put up some of his own money if he wants to draw other people into a project. His interests have varied from hi-tech to brand new products, to academic support, to major support of the arts. While not really a life interview, this series certainly goes beyond just Norm Winningstad's place in the development of the hi-tech industries of Washington County.

All duplication and indexing of the tapes was done by Barbara Doyle. Index was proof-read by Norm Winningstad.

Some specifics concerning Norm Winningstad interviews

Time period covered: overall; 1925 - 1996
hi-tech in Oregon; 1957-1996

Names mentioned:

A. Businesses/Schools

Control Data Corp.
Cray Computer
Dean Witter
Digital Equipment
Floating Point Systems
General Electric
Goldman Sachs
Hewlett-Packard
Hughes
Hydro Catalysis Power
Lattice Semiconductor
Lawrence Berkeley Labs
Mentor Graphics
Optical Data Inc.
OR Coast Aquarium
OR Episcopal School (OES)
OR Graduate Institute (OGI)
OR Museum Science/Industry
OR State Univ. (OSU)
Performing Arts Center (PAC)
Portland Art Museum
Portland State Univ. (PSU)
Seiko
Spectronics
Star Technologies
Tektronix
Thrustmaster
Tyres Heart Theatre
Univ. Cal.- Berkeley
Wildlife Safari
Zeeland

B. Last names

Anderson
Auel
Bouton
Carter
Castles
Culler
Fryer
Hatfield
Hoffman
Johnson
Lawrence
McCutcheon
Merlo
Mills
Moriyasu
O'Leary
Oliver
Pratt
Prince
Rahsneesh
Ropiquet
Salquist
Saud
Segrey
Smith
Tsui
Turner
Vollum
Wantland