OVER THE PAST YEAR AND A HALF YOU HAVE BEEN LISTENING TO SOME FLAT OR DEPRESSED PERFORMANCE WITH REGARD TO PERIOD TO PERIOD FINANCIAL RESULTS. WE HAVE HAD SEVERAL AREAS IN WHICH REVENUES ACTUALLY DECLINED AND IN ANY EVENT, WE HAVE CERTAINLY NOT MET OUR EXPECTATIONS. THROUGH THESE TIMES, HOWEVER, WE'VE REMAINED CONFIDENT THAT WE WERE CONTINUING TO MAKE FUNDAMENTAL PROGRESS IN THE BASICS OF THE BUSINESS. WE CONTINUED TO PUSH FOR MORE REVENUE, BUT AT THE SAME TIME PUT ADDITIONAL EMPHASIS AND PRESSURE ON COST CONTROL AND ASSET PROGRAMS. AS YOU HEARD LAST NIGHT, IT HAS BEEN A GOOD TIME FOR ACCELERATING THE PROCESS IMPROVEMENT PROGRAMS.

TODAY I WANT TO MAKE SOME COMMENTS ON A FEW AREAS WHICH HAVE BEEN RELATIVELY WEAK IN TERMS OF REVENUE AND PROFIT COMPARED TO PLAN AND NOTE SOME SIGNS OF PROGRESS IN THOSE AREAS.

BUSINESS DEVELOPMENT

LET'S TAKE PLATO TRAINING AND EDUCATION. ALTHOUGH REVENUE IS LOWER THAN PLANNED, NEW PROGRAMS AND NEW PROCESSES INTRODUCED
IN THE PAST SEVERAL MONTHS SHOW A CONSIDERABLE AMOUNT OF PROGRESS. BOTH THE TEMPO AND TENOR OF THE MEDIA COVERAGE OF PLATO TRAINING AND EDUCATION HAVE PICKED UP.

I JUST WANT TO POINT OUT A COUPLE OF MINOR NOTES WHICH ARE REPRESENTATIVE OF THE MANY FACETED PROGRESS WITH REGARD TO EDUCATION SERVICES. CONTROL DATA PUBLISHING RECENTLY SIGNED AN AGREEMENT WITH A DISTRIBUTOR (MICROMEDIA) TO DISTRIBUTE PLATO COURSEWARE FOR MICRO USE. FOR THE FIRST TIME, THIS PROVIDES A NATIONWIDE NETWORK OF OVER 2,300 RETAIL OUTLETS INCLUDING SUCH NAMES AS COMPUTERLAND, IBM PRODUCT CENTERS, XEROX STORES AND SEARS BUSINESS CENTERS. INITIALLY, WE WILL OFFER APPROXIMATELY 40 COURSES AVAILABLE ON THE APPLE, TI 99-4A, AND ATARI 800 MICROHS. WE EXPECT THIS RELATIONSHIP TO GREATLY ENHANCE OUR STRATEGY OF REACHING THE CONSUMER MARKET WITH PLATO.

WE HAVE ALSO JUST ANNOUNCED "MICROLINK" THROUGH WHICH OWNERS OF IBM PERSONAL COMPUTERS CAN ACCESS PLATO. LATER THIS YEAR THAT WILL BE EXPANDED TO INCLUDE ZENITH, APPLE, AND OTHER MICROCOMPUTERS.

VOCATIONAL EDUCATIONAL SERVICES (CDI) IS, OF COURSE, A VETERAN PROFIT PERFORMER WITHIN EDUCATION. BUT PROGRESS CONTINUES THERE AS WELL. IN RECENT MONTHS, SOME CREATIVE TECHNIQUES HAVE BEEN INTRODUCED FOR SUSTAINING THEIR PERFORMANCE LEVELS. AS AN
EXAMPLE, AS THE RECESSION CONTINUED, PLACEMENT OF CDI GRADS
BECAME AN INCREASINGLY DIFFICULT TASK, ESPECIALLY IN CITIES
SUCH AS DETROIT. A NEW "REMOTE" JOB SEARCH PROJECT WAS BEGUN
IN DENVER WHICH SUCCESSFULLY LOCATED JOBS FOR DETROIT GRADS.
THIS CONCEPT IS NOW BEING INTRODUCED IN OTHER CITIES WITH
HIGHER THAN AVERAGE JOB POTENTIAL. OUR ATLANTA CDI PERSONNEL,
FORESEEING AN OVER CAPACITY PROBLEM LATE THIRD QUARTER 1982,
DESIGNED A "SUMMER SCHOOL" PROGRAM FOR TEACHERS. ALL
13 INITIAL PROGRAM GRADUATES WERE PLACED IN JOBS EXCEEDING
THEIR TEACHING SALARIES.

THOSE OF YOU ON THE EDUCATION STRATEGY STEERING COMMITTEE HEARD
REPORTS ON A LARGE NUMBER OF ADDITIONAL PROGRAMS: THE
"110/110" PROGRAM, PRODUCTIVITY TRAINING, AND SO ON.

IN THE HEALTHCARE SERVICES AREA, MEDIX, AN ACQUISITION IN
EARLY 1983, PROVIDED US WITH PROVEN VOCATIONAL PRODUCTS IN THE
MEDICAL AND DENTAL TECHNICIAN FIELDS. THIS WAS IDENTIFIED AS A
KEY STRATEGIC AREA FOR EXPANSION. TO DATE, THE PERFORMANCE
BOTH IN OPERATIONAL AND FINANCIAL TERMS HAS EXCEEDED OUR
EXPECTATIONS.

ALSO, IN HEALTHCARE SERVICES, WE CONTINUE TO IMPROVE OUR
BENEFIT SERVICES DIVISION CREDIBILITY AS MORE AGENTS, BROKERS
AND CONSULTANTS COME TO US FOR PROPOSALS. ONE OF THE KEYS IS
OUR DEMONSTRATED ABILITY TO SAVE THE CLIENT SUBSTANTIAL DOLLARS IN THE "COORDINATION OF BENEFITS" AREA. WE HAVE EXPERIENCED SEVERAL SUCCESSES IN THE LAST THREE MONTHS AND ARE BUILDING A GOOD BACKLOG OF BUSINESS FOR NEXT YEAR.

OEM ORDER/BACKLOG

PERIPHERAL PRODUCTS HAS BEEN ANOTHER AREA OF WEAKNESS. BUT AS I INDICATED TWO MONTHS AGO, OEM ORDERS ARE CONTINUING AT A BRISK RATE. JUNE ORDERS REACHED $90.4 MILLION WITH YEAR TO DATE ORDERS NOW STANDING AT $512 MILLION COMPARED TO $475 MILLION FOR THE SAME PERIOD IN 1982. $32 MILLION HAVE BEEN BOOKED THROUGH THE FIRST EIGHT DAYS OF JULY. THIS IS ESPECIALLY ENCOURAGING WHEN YOU RECALL THAT LAST YEAR, JULY WAS ACTUALLY A NEGATIVE ORDER MONTH DUE TO THE SIGNIFICANT NUMBERS OF CANCELLATIONS AND RESCHEDULES.

CCC THRIFT, CASH EMPLOYED AND BUSINESS CENTERS

THRIFT DEPOSITS

WITHIN COMMERCIAL CREDIT, THRIFT DEPOSITS FOR THE FIRST HALF 1983 EQUALED $1.3 BILLION, $82 MILLION OVER PLAN AND $300 MILLION OVER FIRST QUARTER RESULTS. MAJOR GROWTH CONTINUES IN THE STATE OF OHIO. THE AVERAGE MARKET RATE OF THRIFT DEPOSITS HAS DROPPED 34 BASIS POINTS, FROM THE FIRST QUARTER TO SLIGHTLY OVER TEN PERCENT.
CASH EMPLOYED

CASH EMPLOYED FOR THE FIRST HALF OF 1983 WAS SLIGHTLY OVER $5 BILLION, AN INCREASE IN EXCESS OF $400 MILLION OVER FIRST QUARTER RESULTS. MAJOR GROWTH WAVES IN THE CONSUMER BANKING, INTERNATIONAL SERVICES, AND SECURITY INVESTMENTS.

BUSINESS CENTERS

WITHIN THE BUSINESS CENTERS, JUNE WAS THE BEST HARDWARE SALES MONTH THIS YEAR WITH SALES OF 104 SYSTEMS, INCLUDING 27 CDC 110'S AND 114'S AND 77 OTHER PERSONAL COMPUTER AND WORD PROCESSORS. SO FAR THIS YEAR WE HAVE SOLD OVER 500 SYSTEMS, INCLUDING 104 114'S AND 400 OTHER PERSONAL COMPUTERS AND WORD PROCESSORS. WE CO-ANNOUNCED WITH THE SMALL BUSINESS ADMINISTRATION THE RELEASE OF A NEW PLATO COURSE, CONTRACT BIDDING. THE RELEASE COINCIDED WITH NATIONAL SMALL BUSINESS WEEK. WE HAVE SIGNED TWO NATIONAL CONTRACTS FOR PLATO TRAINING IN JUNE. UNDER THE VENDOR PROGRAM WE BOOKED 1,190 DEALS TOTALING ALMOST $14 MILLION. WE INTRODUCED PAYROLL TAX FILING AS PART OF OUR GBS SERVICES. WE RELEASED ENHANCEMENTS TO THE 114 ALLOWING IT TO SUPPORT FIVE CRT'S, FOUR PRINTERS, AND RELEASED MULTI-PLAN FOR THE 114.
FINANCIAL PROJECTION

NOW I HAVE A FEW COMMENTS ON THE PROSPECTS FOR THE SECOND HALF OF THE YEAR. AS NOTED, DUE PRIMARILY TO COST AND EXPENSE CONTROLS, THE FIRST HALF PROFIT WILL BE GREATER THAN BUDGET. THE CURRENT FORECAST FOR THE SECOND HALF OF THE YEAR IS FOR THE PROFIT TO CONTINUE TO IMPROVE ON A QUARTER BY QUARTER BASIS.

FOR THE YEAR, THE TOTAL BUDGET CALLS FOR A PROFIT OF $4.50 AND AN ROIC OF 7.0 PERCENT -- THIS COMPARED TO $4.11 AND AN ROIC OF 6.8 PERCENT IN 1982.

BECAUSE OF THE POSITIVE ACTIONS WE HAVE TAKEN IN TERMS OF EXPENSE CONTROLS AND THE ENHANCED REVENUES OUTLOOK FOR THE SECOND HALF, WE FEEL THAT THIS YEAR'S EARNINGS AND ROIC WILL EXCEED LAST YEARS. THE QUESTION IS, WILL WE MAKE THE BUDGETED INCREASE? BECAUSE OF CONTINUING PROFIT PROBLEMS AT COMMERCIAL CREDIT AND IN SOME AREAS OF WORLD-WIDE DATA SERVICES, THEIR SHORTFALL WILL HAVE TO BE MADE UP IN OTHER AREAS. ALL IN ALL, THAT'S A TOUGH BUT POSSIBLE TASK.
I. Introduction

Some basics of super computers and their development.

I.1 Terminology

Large, very large, super computers, "the most powerful (fastest) machine possible from available technology."

What does it mean?

Well, in terms of speed, it means today a computer that can execute 50-125 million inst./sec. in a single processor (205/50, XMP/100, VP200/125).

However, in terms of a true vector machine, it means a machine that can execute at a maximum 800 million arithmetic operations (205/800, XP200/500, XMP/180).
But there is more, much more.

- Vector length (205/65,000, VP200/2,000, XMP/64)
- Word size 32/64
- Instruction set
- Memory size

So the test is almost always only in actually executing a benchmark program.

Thus, subjective views come into play.

1.2 Designing a Super Computer

What is important is that to design at the edge of what technology is capable of, the designer must be quite free from constraint -- particularly constraints of compatibility with previous designs. Intuitively you can feel that.

It is also unbelievably difficult. The road is littered with failures. Even the successful super computer ever built has been designed twice. 6600 - started tech. wouldn't perform started over - Seymour - "never again do design work separate from tech. work."

6800/7600
8600/CRAY-1
STAR - streaming unit redesign - effort of 7600
CRAY-2
Development time cycle is shortening - to compete with Japanese time cycle, must go from 5-6 years to 3-4 years.

I.3 The Market

The market (initial) is highly dependent on world-wide government funding...not direct but through procurement of government research labs, intelligence agencies, weather services and universities.

The market is populated by a fairly arcane group of highly intelligent scientists and a bunch of hangers-on. They are all highly emotional. My experience at Livermore taught me that those people are the most emotional buyers in the world. And they are so smart they can rationalize in very logical terms any emotional decision they make. (Cray machines at Livermore/STAR) Software: Livermore, Langly - Cray 1 not a super computer; = 2 X 7600 and was up to five times slower than a Cyber 203.

In any event for lots of reasons, then, "small is beautiful" when it comes to selling in this market. Not only is a small company more emotionally appealing to government and others, it can be more responsive, and it will have the total dedication necessary to be creative enough to survive.
II. The Proposal for SCC

II.1 Super Computers 1985-1995

This past month I was called to Washington to testify before the House Science and Technology Committee, chaired by Rep. Fuqua, which is reviewing this country's posture in the super computer business. Those hearings and other discussions which were conducted with key government experts have convinced me that there exists a critical need for super computing at accelerated scales of performance for at least the next 10 to 15 years. The highly publicized, potential Japanese intrusion into what has been Control Data's traditional marketplace, coupled with the market pressures of the few domestic competitors, makes it imperative that Control Data take some innovative steps to ensure that our heritage, U.S leadership in super computers, is preserved and sustained throughout the coming decades. The marketplace and opportunities are there, and U.S. government funding could be made available if a creative approach to attacking that high technology and high risk business can be found.

The 1980's present us with new challenges and opportunities in the management of Control Data's computer business. A dramatic moment is at hand in the super computer arena, with the demands of today's marketplace and the near term confrontations with domestic and foreign competitors pressing CDC to respond.
II.2 Rationale – The Super Computer Market Window

The Japanese have awakened the U.S. super computer community with their long range (beyond 1990) plans and commitments. These advertised targets are usually coupled with promises of almost immediate shipments of machines to compete with the Cray-1 and the CYBER 205. Cray Research has announced that it will skip a generation of systems with the demise of the Cray-2. These two events have conspired to define and incite a marketplace and opened up a market window which this new enterprise can exploit.

II.3 Proposal – Formation of a Unique Super Computer Company

CDC would found and foster a new, independent, publicly held, entrepreneurial corporation whose purpose will be to create, produce and market the world's most powerful computing systems. Capitalizing on the attention being focused by U.S. interests and the funding available to new enterprises from a variety of government sources, this company would be assured a baseline of R&D support as well as a guaranteed marketplace for its products.

Note: These are number crunchers not AI machines. Newsweek article typical of misleading media information.
The corporation will draw most of its principals and founders from CDC's high technology management resources. This company will acquire and continue existing CDC research and development in high performance large scale integration, state-of-the-art packaging, power and cooling, super computer architecture and multiprocessing software, with the aim of producing a super computer for sale starting in 1986 which will have performance levels of from four to 32 times the CYBER 205. This means a machine operation at a peak rate of 10 B fJOPS - or "gigaflops" as they are known. Competitive "pre-announcements" for super computer power indicate that this new company offering will be at least two times more powerful than the nearest "real" challenger.

The R&D funds to complete the next generation super computer will reach as high as $80 million over a five-year period. To employ the new Very Large Scale Integration (VLSI) technology effectively, a significant capitalization of state-of-the-art equipments will demand at least $12 million additional financing. The financial environment at this moment is conducive to the creation of entrepreneurial enterprises. Public capital is abundant, given an attractive and healthy offering. The U.S. government has expressed considerable interest in a variety of creative financial involvements, with a bias toward entrepreneurial ventures.
II.4 Control Data's/SCC Relationships

The new corporation will concentrate on that unique segment of the computer market, the supercomputer, while CDC is freed to apply its energies to its new CYBER mainstream family. Through a founding contractual relationship, CDC will be able to upgrade its super computer customers with CPU's supplied by this new company on a first right of purchase basis. Similar, exclusive agreements will permit CDC to acquire specific technologies whose creation will be accelerated by this new enterprise. The high performance auxiliary equipments, peripherals, CPU's, and communications systems needed to support the new generation of super processors could yield considerable sales volumes of CDC systems to this entrepreneurial company. Special OEM relationships could be of mutual benefit in this area to both founder and offspring company. The commitment by the new company to compatibility and extension of the CYBER 200 concept and architecture will ensure existing and prospective CDC CYBER 200 customers of continuity, future expansion, and upgradeability. Public commitment by CDC to acquisition of these super computers will serve to provide a base of revenue for the new concern as well as to instill confidence in CDC's role as a major influence and supplier of super computer power.
The cadre of engineers which will form this new company area, by and large, highly experienced individuals with very special skills who possess over 15 years of super computer experience with CDC. The key people will be LT, NL. Others to be named. These individuals are at the top of their profession, and most are motivated by technical challenge and their personal commitment to super computer development. The opportunity to wield their skills in an entrepreneurial enterprise would provide a new path of personal growth. In providing this opportunity, CDC is simply demonstrating a continuation of innovative management concepts in engaging in various forms of cooperative ventures to achieve our base strategic goals.

III. Issues/Problems

III.1 "CDC going out of super computer business."

Ans: Government; media; financial analysts; customer base (most important) - if not handled right, neither CDC nor SCC (TLC?) will win but Cray, FUJITSU, etc.

All super computer development can best be done in small organization not subjected to the inevitable demand for "synergy," compatibility with product line strategy for smaller machines.
Control Data is the pacesetter in advanced form of cooperative ventures. For us this is just one more such venture. Through it we can actually more fully participate in the total computer systems market.


MCC is a cooperative way to get advanced technology and SCC is a cooperative way to get advanced products.

III.2 Competition - yes.

III.3 Technology flow (super has always fed main line). Both ways must be arranged - it is vital.