INTRODUCTION

1977 is almost history for us. Our international subsidiaries close their fiscal year two weeks from now -- November 30 -- and, of course, the year-end for the Corporation in total is just six weeks away. So, it is difficult for me to focus my remarks on 1977 when 1978 -- the new and exciting challenge in the continued program of financial progress at Control Data -- is so close at hand. Nevertheless, a few comments on 1977 are required -- by way of a progress report -- since many of you here today have followed along with us from bad times to successive years of progress.

And 1977 will be no exception to that progress. We continue to hammer at our twin themes of steady progress in financial results and absolute determination to improve the fundamentals of our operating methods to assure long-term success.

1977 has also served over again to demonstrate the correctness of our strategy to make data services the main thrust of our business. While there are still those who don't appreciate the dominant role of applications software and information data bases
IN OUR INDUSTRY, THEIR NUMBER IS RAPIDLY DIMINISHING. AND THE IMPORTANCE OF SPECIALIZED DATA SERVICES IN DELIVERING APPLICATIONS AND INFORMATION WAS BECOMING MORE AND MORE VISIBLE DURING THE PAST YEAR. I’LL COME BACK TO THIS IN A MOMENT.

LET ME GO BACK TO 1977 ITSELF. THROUGH NINE MONTHS HERE ARE A FEW BASIC STATISTICS FOR THE COMPUTER GROUP:

- Revenue up 11% from 1976
- Gross margins improved nearly 2 points
- Assets reduced $20 million
- Interest expense down 14%
- Asset-to-revenue ratios from $1.21 in 1974 to $1.09 in 1975 to .97 last year to .82 so far this year.
- Earnings up 128% from 1976 (NPBT).

MY ASSOCIATES WILL BE GIVING YOU A MORE DETAILED REPORT ON THE DATA SERVICES AND SYSTEMS SEGMENTS OF THE COMPUTER BUSINESS SO I WILL NOT COMMENT WITH REGARD TO THOSE AREAS, BUT RATHER LIMIT ANY FURTHER SPECIFIC REMARKS ON 1977 RESULTS TO OUR PERIPHERALS BUSINESS.

AND IT HAS BEEN AN EXCELLENT YEAR INDEED. PERIPHERALS COMPANY REVENUES ARE UP 26% YEAR-TO-DATE OVER LAST YEAR. PROFITS FROM THE RESULTING ECONOMIES OF SCALE ARE AT AN ALL-TIME HIGH. GROSS MARGIN HAS IMPROVED SOME 2 PERCENTAGE POINTS THIS YEAR AND
EXPENSES HAVE INCREASED ONLY 21% SO YOU CAN EASILY SEE THAT THERE HAS BEEN A SIGNIFICANT BOTTOM LINE IMPROVEMENT FROM LAST YEAR.

**Peripheral Subsystems**

1977 has seen the peripherals subsystems segment of the peripherals company reach maturity. The plug compatible products are nicely profitable and expected to do equally well next year. The base of customers has grown to some 1300 and gross margin has increased 2.5 percentage points over last year.

The new programs are also going well. Omega — the IBM plug compatible processor — has met all its technical and market acceptance milestones. Deliveries began in August. Recent IBM announcements were anticipated in the Omega strategy and except for the normal new announcement "absorption time", have no short or long term impact on the program. There are seven installations to date with double that number targeted for year-end.

Progress also continues with the mass storage tape system. While the program will not be a profit contributor for the next year or two, it does represent a significant source of revenue and profit beyond that time.
1977 OEM performance has exceeded our expectations. Our current order level has already exceeded full-year objectives and 1977 orders in total will be up from 1976 by 50%.

Disk products represents the strongest area of performance, up 69% over 1976.

Several factors contributed to the strong 1977 performance. Among them were:

1. The rapid growth of the established mini-computer firms in the United States.
2. The expansion of both mid-range and mini-computer markets in West Europe.
3. Increased penetration of the mini-manufacturers worldwide in terms of both new accounts and additional products into existing CDC accounts.
4. The growth of applications oriented systems houses in the United States (firms marketing systems to specific industry segments).

CDC was able to capitalize on this development through its leadership position in rotating memories, and its ability to offer a full line of peripherals.
The successful maintenance of the established account base, and the addition of over 100 new accounts, brings the total OEM base to over 700; accounts ordering $1.0M or more have grown to 40, again 50% greater than 1976.

We expect to enter 1978 with a backlog which will be 30% higher than last year's record backlog.

Basic Strategy

Those are a few of the dimensions of the continued progress in 1977. Let me go back now to the matter of basic market outlook and strategy.

Every day that goes by makes me more convinced that our philosophy of positioning Control Data to provide significant contributions to the solution of major world problems is sound . . . and is working.

In the early days scientific and engineering computing was associated primarily with military applications. For several years this area of computing was viewed as being of declining importance. This situation was further confused by the "one computer to do all things for all people" approach fostered by IBM and others.
Today we are seeing a real re-emergence of demand for the kind of scientific and engineering systems that we are so famous for. The major societal problems of today all require our kind of expertise ... energy research, petroleum exploration, redesign of automobiles for weight reduction and engine efficiency, agriculture, weather education, technology transfer and job creation, econometric and other modeling systems, better health care, and water conservation. All of these basic problems are generating increased demand for the particular capabilities represented by Control Data and to computer services and systems. These problems are not cyclical. They are fundamental, insistent, and growing. We know we are in a position to help.

We start, then, with a basic strategy based on services. All these major societal problems involve an overwhelming need for information. And this is what Data Services, Education and Professional Services are all about. But beyond that, Control Data is a unique service company. It can be viewed as being highly vertically integrated. That is, the computer mainframes, peripheral products, software products, financial services and consulting services that go into a final information service product are all made by ourselves. At the same time the total market for information services is so huge and is approached in so many ways that there are enormous markets for each of these other components as well. Thus, in Peripheral Products -- by selling OEM; or in computer mainframes -- by selling complete
SYSTEMS; OR IN CONSULTING SERVICES -- BY TREATING THAT AS A SEPARATE STAND-ALONE OUTSIDE CONSULTING COMPANY, WE ACHIEVE ECONOMIES OF SCALE NOT POSSIBLE TO ANY OTHER SERVICE COMPANY. ANOTHER WAY TO LOOK AT THIS IS THE FOLLOWING. STARTING FROM THE BASE-LEVEL PRODUCTS, SUCH AS PERIPHERALS, COMPUTERS, FINANCIAL SERVICES, AND PROFESSIONAL PEOPLE, A VERY LARGE NUMBER OF EVER-INCREASING, VALUE-ADDED PRODUCTS AND SERVICES CAN BE GENERATED. THE HIGHEST VALUE-ADDED COMBINATION IS A SPECIFIC DATA SERVICE. THE LOWEST IS A SIMPLE PIECE OF HARDWARE.

SO THESE COMBINATIONS CAN BE THOUGHT OF AS LEVELS OF VALUE-ADDED SERVICES. AND I HAVE INDICATED THAT ATTRACTIVE MARKETS EXIST FOR ALL LEVELS, WHILE AT THE SAME TIME REINFORCING THE ULTIMATE SERVICES THRUST OF THE BUSINESS.

COMMITMENT AND POTENTIAL FOR FUTURE IMPROVEMENT

BUT 1977 -- AS WELL AS 1976 AND 1975 -- IS ONLY VISIBLE AND NUMERICAL EVIDENCE OF PAST PROGRESS. THE OTHER HALF OF THE EQUATION IS THE INVESTMENT IN TIME AND MONEY TO IMPROVE THE FUNDAMENTALS OF OUR OPERATIONS. IN A FEW MINUTES I CANNOT HOPE TO COVER EVERY ASPECT OF THIS SUBJECT. BUT PERHAPS A FEW EXAMPLES CAN GIVE YOU SOME PERSPECTIVE ON THE BREADTH AND INTENSITY OF THAT COMMITMENT. I WARN YOU IN ADVANCE THAT THIS IS NOT A GLAMOROUS SUBJECT. BUT THE PAYOFF IN REALIZING THE
Potential of Control Data's strategic position is so great and so exciting that for all of us it is not grubby work at all -- in fact, it's just plain fun.

**Assets** (A/Rev progress 74-77 (repeat)

- weeks of inventory examples
- Receivables - 3 yr progress, delinquencies, range over various business potential of over 60 days for the future.

### Management Training

During 1976, a strategy was devised to implement a corporate-wide program of management education utilizing the CDC expertise in computer-based education as the primary courseware delivery system. The impetus for this extensive program was our firm belief that management education is the foundation for effective
MANAGEMENT IN THE LONG TERM, AND ONLY BY PROVIDING APPROPRIATE EDUCATIONAL COURSES WOULD WE ACHIEVE A CONSISTENT LEVEL OF PROFESSIONALISM.

In 1977, this comprehensive management education plan was initiated around a seven-course core curriculum of approximately 175 hours. The program specifics included personal counseling with each manager on their educational objectives for the year and a database tracking system which allowed us to monitor program progress.

The goal set for each manager was 50% of the required curricula approximately 12 days of training with results to date indicating this objective will be achieved. Perhaps more importantly, we have validated the effectiveness of PLATO and CBE as a viable method for effective learning in the field of management education.

This program will, of course, be on-going with 1978 objectives for both current core courseware completion and extensive development of additional courseware for the future. We have every reason to believe that the results of our internal management education system will clearly demonstrate the positive impact of management education on total corporate productivity.

TECHNICAL EFFORT

Back in 1974, technical spending in EDP systems was obviously way beyond the limits supportable by our volume of business.
Not only was the level too high, the various projects -- especially in software -- were not contained within a sharply focused market strategy. As a result, even though we were spending too much we weren't spending enough to be effective. All this was compounded by many instances of poor project management.

First, we found that our CYBER product line was being delivered with one of three different operating systems. From a technical spending and marketing point of view, this is the same as having three product lines. Since no "line" was ever really complete, individual contracts called for special options or features. In most cases, this resulted in specialized technical effort being expended to satisfy the technical requirements of these items. We elected to make a strategic decision in the context of moving deliberately to the sale and installation of common or "vanilla" systems. As you would expect, this required that we become more discriminating in terms of the orders we would seek and accept.

Secondly, we made a tactical decision related to management control systems and employee productivity. Our analysis suggested that we could get more throughput per technical dollar by investing in additional training for our technical staff. To that end, we developed, organized and trained large numbers of our technical staff in project management control techniques. I consider this effort to be one that has enjoyed great success. It has allowed us to increase our employee productivity which as a by-product also goes far in improving employee morale.
FROM THE 1974 BASE, THE TECHNICAL SPENDING LEVEL HAS BEEN REDUCED BY ABOUT 20% WITHIN EDP SYSTEMS IN EACH OF THE FOLLOWING THREE YEARS ALTHOUGH REVENUES ARE UP. HOWEVER, WE HAVE NOT IMPACTED OUR ABILITY TO BRING OUT NEW HARDWARE AND SOFTWARE PRODUCTS NOR WILL IT IMPACT THE DELIVERY OF THESE PRODUCTS IN THE FUTURE.

MARKETING


IN LOOKING FORWARD TO 1978, WE HAVE PLANS IN PLACE TO INCREASE THE WORLDWIDE SALES FORCE BY ABOUT 12-15 PERCENT. THESE INVESTMENTS IN ADDITIONAL PERSONNEL BEING DEVOTED TO THE SELLING EFFORT WILL OCCUR ACROSS A BROAD RANGE OF OUR PRODUCT LINE AND IN EVERY MAJOR GEOGRAPHIC AREA, BUT WITH EMPHASIS ON DATA SERVICES.

EMPLOYEE PRODUCTIVITY IN THE SELLING AREA WITH ITS POTENTIAL FOR IMPACTING FAVORABLY THE REVENUE STREAM AND THE MARKETING EXPENSE TO REVENUE RATIOS IS ALWAYS AN IMPORTANT ON-GOING CONCERN. TO THAT END, WE ARE MAKING LARGER INVESTMENTS IN SALES TRAINING. OUR THRUST HERE IS TWOFOLD:
1. Increase the capability and resultant productivity of the existing sales force, and

2. Provide appropriate amounts of front-end training for the new sales personnel being added to the force.

Data Services

In data services, our gross margins are up 3 points from 1976 and are up 6 points from 1975. With these improvements in the cost of sales, you can see that the impact on the bottom line has been significant. These improvements will hold and get better. As our revenues rise, the impact of "economy of scale" becomes an ever larger factor. This is particularly true on the worldwide data services network.

As we continue to grow in data services, the improvement leverage will become increasingly evident. I would anticipate that we could see bottom line margins in the range of 15-20 points.

These results will basically stem from our market orientation. That is to say, we not only will offer the fastest compute power in the industry, but will emphasize a wide variety of customer oriented data services for specific market niches. These range from Arbitron -- a leader in broadcast measurement, Ticketron -- in ticketing applications, display graphics, financial modeling, banking services including EFT and many other applications.
Our data services offerings are large and getting larger. Specific applications and specialized market niches comprise an ever larger portion of the total. These tend to be more profitable than the sale of raw computer time. Therefore, our product differentiation plus a continually more efficient delivery vehicle is combining to leverage our profits up in data services.

Those, then, are a few highlights on our computer business and how we view the potential for the future. In a word or two, it comes down to this: It is not a matter of being optimistic or pessimistic -- it is only a matter of being determined to take what is there for the taking.

Last year at this time, we held a meeting such as this in Minneapolis. At that time, I closed my remarks with the following:

The outlook for next year is for further progress -- at about the same pace as this year in both revenue and profits. (I was conservative.) Our asset programs are such that we will have a continuing decline in the asset to revenue ratio. In fact, due to both efficiency and the changing mix of business between services and systems, this will be true each year for the next five years. As I have indicated, overall expenses will decline as a percent of revenue in a slow progression for the next five years.
THIS, HOWEVER, THERE IS THE FACT THAT MARKETING WILL INCREASE -- NOT ONLY IN TERMS OF ABSOLUTE DOLLARS, BUT AS A PERCENT OF REVENUE.

AS FAR AS FINANCING IS CONCERNED, THE SYSTEMS AND SERVICES BUSINESSES ARE NOW -- AND WILL BE -- SELF-SUSTAINING. THAT IS, THE COMBINATION OF INTERNALLY GENERATED PROFITS AND DEPRECIATION AND LEASE BASE FINANCING THROUGH COMMERCIAL CREDIT WILL MORE THAN COVER OUR CASH REQUIREMENTS -- INCLUDING THE INVESTMENT IN EDUCATION. THAT IS OUR LARGEST AREA OF INVESTMENT. IT IS FOLLOWED BY DATA SERVICES. PERHAPS THE MAGNITUDE OF THAT UNDERTAKING CAN BE UNDERSTOOD A LITTLE BETTER BY POINTING OUT THAT ESSENTIALLY WITH FIVE YEARS THE EQUIVALENT OF A NEW COMPUTER SYSTEMS PRODUCT LINE WILL BE DEVELOPED AND DELIVERED -- AND YET THIS FACT IS OVERSHADOWED BY THE DATA SERVICES AND EDUCATION NUMBERS OF OUR PLAN.

MOREOVER, OUR PLAN -- WITH REGARD TO REVENUE GROWTH RATES -- IS FAIRLY CONSERVATIVE IN ITS TOTAL PERSPECTIVE. THESE REVENUES ARE ALSO MORE FIRMLY BASED ON SPECIFIC MARKET AREA PROGRAMS THAN IN THE PAST. THE FUTURE IS BY NO MEANS RISK FREE BUT WITH MANAGEABLE RATES OF INVESTMENT AND A LOT OF DETERMINATION OUR REVENUE AND PROFIT GOALS ARE ACHIEVABLE.

I'M SURE THAT IN A FEW YEARS WE ARE GOING TO BE ABLE TO LOOK BACK WITH AS MUCH SATISFACTION ON THE RESULTS AS TODAY WE ARE LOOKING FORWARD WITH ANTICIPATION TO OUR PLANS.
Today I can find no more suitable words to express my feelings about Control Data -- its present year and its future. The future certainly is by no means risk free. But our business is financially more sound than a year ago and our determination as strong. Next year is another challenge -- as I said at the beginning, an exciting challenge. We are looking forward to that.

Thank you.