

DYNACOMP

26-1

QUALITY SOFTWARE FOR

**ATARI
APPLE
TRS-80
PET/CBM
NORTH STAR
CP/M**

- * GAMES**
- * ENGINEERING**
- * EDUCATION**
- * SIMULATIONS**
- * STATISTICS**
- * UTILITIES**

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Summer, 1981

Quality software for:

Atari:*	Atari BASIC
Apple II:	16K Applesoft BASIC
TRS-80:**	16K Level II BASIC
PET/CBM:	16K Commodore BASIC
North Star:	5¼" Diskette, North Star BASIC
CP/M:	8" Soft Sected Disk, MBASIC 5¼" North Star format, MBASIC

The goal of DYNACOMP is to provide high quality products and services for the personal computing and business communities. As a DYNACOMP customer, you will find our service to be exceptionally prompt, the software excellent, and the documentation complete. Our game and simulation programs are not trivial items which rapidly lose their novelty. Rather, they provide many hours of intellectual stimulation.

DYNACOMP's selection of software is rapidly expanding and this catalog represents those programs currently in stock and ready for delivery. Much time and effort has gone into the development and testing of DYNACOMP's products, and we are certain that you will be a satisfied customer.

Please send check or money order and specifics regarding computer and media (cassette, diskette or disk) when ordering. If paying with MASTER CARD or VISA, please include all numbers as they appear on your charge card. All software orders will be shipped within 48 hours via first class mail.

We are constantly upgrading our software products, making them more efficient and offering more features. As software upgrades become available, previous customers will be notified by mail. Upgrades may be obtained for a nominal copying fee.

* Most Atari programs require 24K. Those that will run in 16K are so marked in the catalog.

** TRS-80 diskettes do not come with TRSDOS or BASIC on them.

All TRS-80 programs will run on the Model III with the exception of TIDY, GRAFIX and CRIBBAGE.

Atari, Apple, TRS-80, PET/CBM, IBM, North Star, CP/M and MBASIC are tradenames and/or trademarks.

BRIDGE 2.0

This program is unique in its ability to challenge the experienced player and yet provide an entertaining and instructional introduction to contract bridge for the novice. Unlike other bridge programs, BRIDGE 2.0 both bids and plays! The bidding closely follows the Goren point count system and the computer will even "double" your contract if you bid too high!

The print-out is formatted similar to the bridge column in the daily newspaper. However, the only hands visible during play are yours and the dummy's. Because of the strategies employed, the computer's level of play is high and the opportunity exists to sharpen your card-playing skills. This is one computer program which you will not tire of. In fact, it is addictive!

Price: \$17.95 Cassette
\$21.95 Diskette
\$24.45 8" CP/M MBASIC Disk

YOUR HAND (SOUTH):

S: AQJ9854
H: T
D: 74
C: KT3

YOU ARE THE DEALER.

WHAT DO YOU BID?

SOUTH ?1S
WEST: 2D
NORTH: PASS
EAST: 2H
SOUTH ?P
WEST: 3D
NORTH: PASS
EAST: 4D
SOUTH ?P
WEST: 5D
NORTH: PASS
EAST: PASS
SOUTH ?P

THE CONTRACT IS: 5D
THE DECLARER IS: WEST

REVIEW OF THE BIDDING:

SOUTH	WEST	NORTH	EAST
1S	2D	PASS	2H
PASS	3D	PASS	4D
PASS	5D	PASS	PASS

READY TO PLAY?Y

ROUND: 1

SD WE: 0 THEY: 0
EAST:
S: 6
H: AKRJ74
D: Q62
C: 982

SOUTH:

S: AQJ9854
H: T
D: 74
C: KT3

NORTH PLAYS: 2S
EAST PLAYS: 6S
SOUTH PLAYS: ?AS
WEST PLAYS: 1S

HEARTS 1.5

For the first time available as a computer program, this version of the popular card game of hearts pits you against two computer opponents. Hearts is a trick-oriented game in which the purpose is to not take any hearts or the Queen of Spades. Penalty points are given for taking those cards and the player with the lowest score wins the game.

This computer version allows you to pass your three most undesirable cards to one of your opponents before play. However, the other opponent does the same to you! The program employs a hard-to-beat playing strategy which creates quite a challenge for even the advanced player. A great way to learn the game or become more proficient at playing hearts.

Price \$15.95 Cassette
\$19.95 Diskette
\$22.45 8" MBASIC Disk

YOUR HAND:

S: QJT98
H: A62
D: KT98532
C: 97

SELECT 3 CARDS TO GIVE PLAYER 2

?QS

?KD

?AH

HAND #3 HAS PASSED TO YOU:

AD JD KC

YOUR HAND:

S: JT98
H: 62
D: AJT98532
C: K97

HAND 3 PLAYS THE 2C

YOU PLAY THE ?KC

HAND 2 PLAYS THE 1C

CRIBBAGE 2.0

(For TRS-80 Only)

CRIBBAGE 2.0 is a two-handed version of the classic card game, Cribbage. The standard rules of play and scoring are followed, and the points are announced using the traditional phrases. The score is visually shown on a standard 60-hole cribbage board which requires two "trips" to win.

The computer is a worthy opponent in CRIBBAGE 2.0. The program features excellent graphics and assembly language sub-routines for fast response in determining crib cards and meld points. The ownership of the crib is considered to get a good crib determination, and you may ask the computer for help with your crib cards.

This is an excellent program for the cribbage player in search of a tough opponent as well as the beginner wishing to learn the game and its scoring intricacies.

Price: \$14.95 Cassette
\$18.95 Diskette

BACKGAMMON 2.0

(Atari, North Star, and CP/M Only)

This program (by Giga, Chicago, IL) tests your backgammon skills and will also improve your game. A human can compete against the computer or against another human. The computer can even play itself! Either the computer or human can double or generate dice rolls. Board positions can be created or saved for replay. BACKGAMMON 2.0 is played in accordance with the official rules of backgammon, and is sure to provide many fascinating sessions of backgammon play.

Price: \$14.95 Cassette
\$18.95 Diskette
\$21.45 8" MBASIC Disk

POKER PARTY

If you enjoy draw poker, then this is the software package for you.

POKER PARTY is better classified as a simulation than as a game. As a simulation, POKER PARTY is an excellent (and inexpensive) tool for learning the subtleties of draw poker. As a game, it is simply fascinating!

POKER PARTY differs from most microcomputer poker games in the following two important ways. First, the level of play engaged by the computer opponents on the whole is quite high. Second, it is not just a two-handed game (how often do people play two-handed draw poker in real life?), but rather seven-handed. The usual rules of draw poker are followed, including a maximum of three rounds of betting before the draw (up to five cards), and at most three after. Aces may be used either high or low in straights, and there is a wild card.

The six computer players each have a different "personality" ranging from conservative to risk-taking. You can get to know your opponents with time, but it will require careful observation of the betting patterns. Your seating position changes from game to game. Sometimes you will follow a bluffer, other times he (she) will follow you.

Spend an evening with POKER PARTY for enjoyment, or practice for that next money game!

Price: \$17.95 (Cassette)
\$21.95 (Diskette)
\$24.45 (8" MBASIC Disk)

STUD POKER

(Atari Only, 16K)

STUD POKER contains two menu selectable versions of this popular poker game. One version displays all your cards and three of the computer's. You then bet on the cards that you see. The other version provides a round of betting after each card is dealt. You will find the computer to be a worthy opponent who occasionally bluffs but never cheats! STUD POKER employs all of the Atari's sound, color, and graphics capabilities and will run on 16K systems.

Price: \$11.95 Cassette
\$15.95 Diskette

CHESS MASTER

(For North Star and TRS-80 Only)

CHESS MASTER is a computer program which will challenge your chess playing ability with its aggressive style of play. Written in assembly language (by SOFTWARE SPECIALISTS of Norco, California), this program employs the full graphics capability of the TRS-80 and also provides the North Star user (either Z80 or 8080 microprocessor) with two different board sizes to select from.

You may choose between five different playing skills for your computer opponent, ranging from beginner (but a tough opponent when playing "lightning" chess!) to expert. Besides providing for King or Queen-side castling, en passant captures and pawn promotion, CHESS MASTER also allows you to preset the board in any configuration which you may find of interest. This allows for the examination of book situations or the replaying of interesting positions occurring during previous games.

Moves are conveniently made by entering the number of the square you are moving from and the number of the square which you are moving to. The program checks all moves for legality and then displays the moves in standard chess notation.

Price: \$19.95 Cassette
\$23.95 Diskette

Sample:
(North Star, small board)

CHECK

80	-	*N	-	-	-	-	*R	-
70	*R	*P	-	-	R	-	-	-
60	-	*K	-	-	-	-	-	-
50	*P	-	-	-	P	-	*P	-
40	P	P	N	*P	-	-	-	-
30	-	-	-	B	-	-	-	-
20	-	-	P	-	-	-	-	P
10	-	-	-	-	-	-	K	-

1 2 3 4 5 6 7 8

FROM SQUARE: 62

TO SQUARE: 61

16 BL K - QR3

17 WH QNP - QN5

CHECK

** CHECKMATE **

80	-	*N	-	-	-	-	*R	-
70	*R	*P	-	-	R	-	-	-
60	*K	-	-	-	-	-	-	-
50	*P	-	-	-	P	-	*P	-
40	P	-	N	*P	-	-	-	-
30	-	-	-	B	-	-	-	-
20	-	-	P	-	-	-	-	P
10	-	-	-	-	-	-	K	-

1 2 3 4 5 6 7 8

STARTREK 3.2

STAR TREK 3.2 is a new and exciting version of the classic Star Trek simulation many have played on "large" computers. This version is a significantly enhanced program, is more complex, and is more challenging. It was written by a visiting Klingon who decided to give his side a chance. The Empire gets even!

The Klingons have learned from their past experiences. Their task force is now composed of both light (the old style) and heavy cruisers. Some of the heavy cruisers have a photon torpedo deflection device and must be attacked from their weak side or with phasers. The Klingons no longer wait to be fired on, but may initiate a battle. They also attack starbases in distant quadrants without warning and have enough fire power to eventually capture those bases unless the Enterprise goes to the rescue.

The Klingons now fight battles with a much better strategy. For example, they move. Sometimes they will move behind stars and hide. Other times they close in for a close range phaser attack. Klingon heavy cruisers sometimes start a battle with low energy blasts, trying to give the impression of a light cruiser. However, when the Enterprise closes in for a phaser kill ... surprise!

Anyone who enjoys Star Trek simulations must play STAR TREK 3.2.

Price: \$11.95 Cassette
\$15.95 Diskette
\$18.45 8" CP/M MBASIC Disk

SPACE TILT

(Apple II Only)

SPACE TILT is a test of both skill and patience as you use your game paddles to roll a "ball" through a "hole" in your TV screen. This program uses HiRes graphics to represent a plane with a randomly placed hole in it. The game paddles "tilt" the plane around the X and Y axes. The ball then rolls in according to the plane's orientation. The game appears simple: roll the ball into the hole. Except ... each time you succeed in this task, the hole is replaced with an even smaller hole!

SPACE TILT can be played with any number of people. A clock is constantly displayed ticking off the seconds to determine who can complete the task in the shortest time period.

Price: \$10.95 Cassette
\$14.95 Diskette

MOVING MAZE

(Apple Only)

Are your nerves good enough to thread your way through a maze? This program creates and then constantly modifies a maze on your screen. You must use the game paddles to control your movement from one end of the maze to the other. Points are deducted anytime that you touch one of the walls. Time also plays a role, the faster you traverse the maze, the higher you will score.

Price: \$10.95 Cassette
\$14.95 Diskette

ALPHA FIGHTER

(Atari Only)

This package consists of two game programs: ALPHA FIGHTER and ALPHA BASE. Both games employ the joystick which is used to maneuver your starfighter or base and to fire your blasters. In ALPHA FIGHTER, you are being attacked by alien starships and must try to prevent them from getting past your starfighter. The more you let by, the worse your score. In ALPHA BASE, you must use your mobile firing base to launch your projectile against the alien starships passing overhead. You must anticipate the ascent rate of your projectile and the lateral motion of the alien starships. As you become more successful in shooting down the aliens, they start sending in smaller, faster ships, thus continuing the challenge.

Price: \$14.95 Cassette
\$18.95 Diskette

INTRUDER ALERT!

(Atari Only, 16K)

You are in the middle of the "Dreadstar," having just obtained its secret plans. You must escape to your ship with those plans in order to save the Federation. INTRUDER ALERT is a fast-paced, real-time action game. You control your motion through the various passageways of the Dreadstar with the joystick which is also used to fire your blaster. All along the path to safety, you are confronted by Droids who shoot at you as you come into range. Five levels of difficulty are provided in this game, ranging from Sand Scout to Centurian Master.

Price: \$16.95 Cassette
\$20.95 Diskette

GIANT SLALOM

(Atari Only, 16K)

Bring the Winter Olympics to your computer anytime of the year! You use your joystick to guide your ski's path down a giant slalom course consisting of both open and closed gates. You may choose from one of three levels of difficulty, take practice runs, or compete against other skiers. In competition, each skier must ski the same course. After the first run, the course is changed and another run is made. The best combined time wins.

Price: \$14.95 Cassette
\$18.95 Diskette

MONARCH

(Atari Only, 16K)

MONARCH is a brain teaser! You have just been elected the Ultimate Ruler of your own country. It is your job to decide the country's budget. Your country's income comes from farm produce, tourism. Half your land is farmland while a having excellent mineral content. It is up to you to decide how to manage the country's economy and to redistribute the wealth to your countrymen. Can you keep your countrymen happy enough to last in office for eight years?

Price: \$11.95 Cassette
\$15.95 Diskette

GAMES PACK I AND GAMES PACK II

Each of these two software packages contains an interesting cross-section of traditional computer games. The packages are conveniently set up as one large program. This allows you to return to the control program after completing one game and immediately run another game without having to reload. This feature is very useful for cassette users.

GAMES PACK I includes simple physical models, such as CATAPULT and LUNAR LANDER; an excellent mathematical brain teaser, SWITCH; and entertaining gambling games: BLACKJACK, HORSE RACE, CRAPS, and SLOT MACHINE.

GAMES PACK II contains the popular word puzzle of JOTTO; two entertaining card games: ACEYDEUCEY and CRAZY EIGHTS; the fascinating game of LIFE plus WUMPUS, NUMBER GUESS, and CALENDAR.

Price: \$10.95 Each Cassette
 \$14.95 Each Diskette
 \$17.45 Each CP/M MBASIC Disk

NORTH STAR SOFTWARE EXCHANGE

(North Star Only)

NORTH STAR SOFTWARE EXCHANGE (NSSE) is a public domain software library consisting of 20+ diskettes. These diskettes contain a wide variety of programs ranging from games through utilities. DYNACOMP is not an authorized North Star distributor, but feels that a valuable service can be performed by making such software easily available at a very low price.

There is no printed set of documentation associated with this library, though notes are usually incorporated on each diskette. However, DYNACOMP has briefly reviewed most of the programs and has prepared a digest of the library along with some recommendations.

As you may realize, the cost of the diskettes and handling makes this a near-zero profit margin item, and DYNACOMP can offer no further support (e.g., suggestions as to program modifications, etc.) other than replacing defective diskettes.

Price: \$9.95 Each (1-3)
 \$7.95 Each (4 or More)

CRYSTALS

(Atari Only)

CRYSTALS is a unique program. It is not a game or simulation, business, or technical program. It simply generates very beautiful color patterns on your screen. These fascinating graphics displays are always different and the effect is mesmerizing, much like sitting in front of an electronic fireplace! CRYSTALS has been used in retail stores to demonstrate the graphics, sound, and color capabilities of the Atari.

Price: \$ 9.95 Cassette
 \$13.95 Diskette

NOMINOES JIGSAW PUZZLE

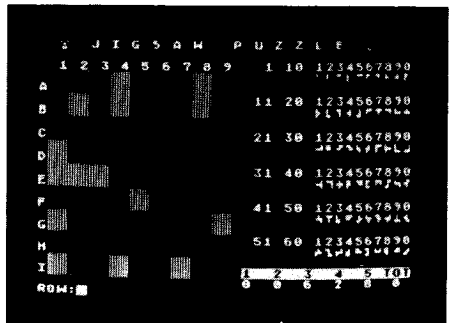
(Atari, Apple, and TRS-80)

The NOMINOES JIGSAW fully uses the graphics capability of your computer to display a table of 60 different shapes and a playing area onto which the pieces are "fitted." The object of the puzzle is to completely fill in the playing area taking as few guesses as possible.

Nominoes are geometric shapes formed by placing squares together face-to-face. The nominoes used in this puzzle range in size from one to five. Each time the program is run, it generates a new solution calling for a different set of shapes in order to complete the puzzle. Various options produce different levels of play ranging from interesting to hair pulling. The variations are practically limitless resulting in a puzzle which you will want to play over and over again.

Price: \$16.95 Cassette
 \$20.95 Diskette

Atari display:



CHOMP-OTHELLO

(Atari Only, 16K)

CHOMP-OTHELLO consists of two games. CHOMP is in reality a two-dimensional version of Nim. OTHELLO is a computer version of a board game called Reversi. In CHOMP, the playing board is a big cookie; the player defines the cookie's size in terms of rows and columns. In the upper left corner is a poison square. To take a chomp, you indicate the row and column of one of the squares of the cookie. All squares below and to the right of that square disappear. The one who chomps the poison square loses the game.

In OTHELLO, you try to place your pieces on an 8x8 board so that it outflanks the computer's pieces. If successful, those pieces become yours. Whoever captures all of his opponent's pieces first is the winner. OTHELLO has two levels of play and is a very tricky program! The graphics, sound, and color in this package are exceptionally well done.

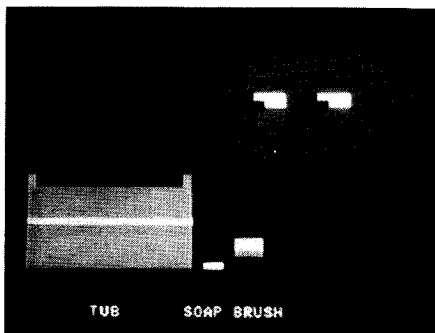
Price: \$11.95 Cassette
 \$15.95 Diskette

HODGE PODGE

(Apple Only, 48K Integer or Applesoft BASIC)

HODGE PODGE is a computer "happening" for children from ages 18 months to seven years and older. It is a surreptitious learning device which provides knowledge in a most enjoyable (and non-intimidating) fashion. The program consists of many cartoons, animations, and songs which appear when any key on the computer is depressed. Each key provides something different for the child to explore from Apples to Zigzags. With an adult present, the child can be told about magnets, numbers, musical notes, animals, up and down, color, and much, much more. When alone, the child will be kept endlessly amused by the color, sound, and wonderful pictures displayed by HODGE PODGE. This program is a must for any family containing children and an Apple.

Price: \$19.95 Cassette
\$23.95 Diskette



TEACHER'S PET I

TEACHERS PET I is designed for the very young computerist (ages 3-7). It is meant to be an introduction to computers as well as a learning tool for arithmetic and letter-word recognition. The program provides a menu of four selections. ARITHMETIC SKILLS consists of three levels of arithmetic problems, ranging from addition only (Level 1) to addition, subtraction, multiplication and division (Level 3). For all levels, the problems get more difficult as more correct answers are recorded. When wrong answers are encountered, the level of difficulty drops subtly to avoid frustration. At the conclusion of an ARITHMETIC SKILLS session, the child's score is printed out for reference purposes.

COUNTING PRACTICE requires the user to count randomly selected figures. LETTER RECOGNITION displays randomly selected words requiring the user to find and type the letters of the word. ANSWER MAN provides the user with a "recess." The computer will provide randomly selected answers to verbal questions.

Price: \$11.95 Cassette
\$14.95 Diskette
\$17.45 8" CP/M MBASIC Disk

CRANSTON MANOR ADVENTURE

(North Star and CP/M only)

North Star and CP/M users finally have available a most intriguing adventure program. THE CRANSTON MANOR ADVENTURE takes you into mysterious (and dangerous!) Cranston Manor where you attempt to collect its many treasures. Lurking in the Manor are wild animals and robots who will not give up the treasures without a fight! This challenging program will provide you with many hours (days?) of fascination. The adventure may be interrupted at will and your status saved onto the diskette. Any number of people may play; THE CRANSTON MANOR diskette will store over 200 suspended games.

Price: \$21.95 North Star Diskette
\$24.45 8" CP/M MBASIC Disk

MANAGEMENT SIMULATOR

(North Star, Atari and CP/M only)

This program is both an excellent teaching tool, as well as a stimulating intellectual game. THE MANAGEMENT SIMULATOR (by Giga, Chicago, Illinois) is based on similar games played at graduate business schools by teams of managers. The game realistically models the economic marketplace of the business world.

Each player, or team of players, controls a company which manufactures three products. The company competes against other companies, each of which sells three similar products. Each player attempts to out-perform his competitors by selecting what he perceives to be an optimum operating strategy. This strategy includes setting the following: selling price, per unit manufacturing costs, production volumes, marketing and design expenditures, plant and securities investments, as well as stockholder's dividends. The most successful firm is the one with the highest stock price when the simulation ends. The computer can also compete as a "pacesetter company." This feature is most useful when playing alone.

The MANAGEMENT SIMULATOR can either be played on-line or off-line and data from unfinished games can be saved on disk for continued play at another time. There are two selectable output modes: one mode utilizing a format design compatible for CRT use (assumes a 16x64 scrolling output), and the other mode utilizing a format design for printer use. Each player will be able to study an income statement, a cash flow report, a balance sheet, a plant report, various product reports, past and projected business indexes, or a competition report. It is from this information that the player can make suitable business decisions.

Price: \$19.95 Cassette
\$23.95 Diskette
\$26.45 8" MBASIC Disk

GRAFIX

(For TRS-80 Only)

Have you ever attempted to utilize your TRS-80's graphics potential, but were put off by the prospect of typing in the many set statements needed for an intricate figure? GRAFIX takes the burden out of TRS-80 graphics by allowing you to first "draw" your creation using your computer's keyboard to control the write cursor. Once the figure is drawn, you can easily modify it until it is perfect and then save it as a string variable in your BASIC program. Draw a "happy face," save it as H% and have it displayed by simply using PRINT H% in your BASIC program!

GRAFIX is written in assembly language by SOFTWARE SPECIALIST of California. Once loaded into memory, it remains there throughout your entire programming session. You may load any number of BASIC programs and GRAFIX will be there to add graphics whenever you desire.

Price: \$14.95 Cassette
\$18.95 Diskette

TIDY

(For TRS-80 Only)

This will certainly be one of your more valuable TRS-80 programs, especially considering its modest price! TIDY will renumber your BASIC program over any legal line number range using any convenient numbering interval.

TIDY also compacts your programs by removing all spaces and/or Remark statements. The result is a physically smaller program (less bytes of RAM used) which executes significantly faster than an "uncompacted" version.

TIDY is written in assembly language by SOFTWARE SPECIALIST of California. It, therefore, executes very rapidly and does not take up much memory. In fact, it is recommended that TIDY be loaded at the beginning of a programming session and left in memory. You can load your BASIC programs without having to reload TIDY; it is always there ready to tidy-up your programs.

Price: \$10.95 Cassette
\$14.95 Diskette

MORSE CODE TRAINER

(TRS-80 Only)

MORSE CODE TRAINER (MCT) turns your TRS-80 into an automatic code generating machine which is far superior to any educational phonograph record or tape. The audio output from MCT is through the AUX jack of the TRS-80 TAPE cable. Either connect this jack to an amplifier, or play the signal through your program tape recorder.

MCT permits the selection of various code rates (4 through 11 words per minute) as well as pitch. Test sequences include words composed of random letters, numbers or punctuation. In addition, randomly selected sentences are available, and you may even compose your own phrases.

The format of the video display is very convenient. After you respond with an analysis of the message, MCT will present a side-by-side comparison of your response and the correct translation, and score you. All in all, a very effective way to learn Morse Code.

Price: \$12.95 Cassette
\$16.95 Diskette

LOGIC DESIGNER

(North Star and CP/M Only)

LOGIC DESIGNER is an interactive digital design program (not a simulator) which greatly speeds up and simplifies digital hardware design. Error-free solutions of combinational logic problems having between 2 and 8 input variables are obtained quickly and easily. Previously, such capability has been available only on large mini and mainframe computers.

The program prompts for a user-defined truth table (including "don't care" conditions) and reduces the input data into two boolean logic equations. Either equation can then be directly and easily converted into digital hardware. The program asks for all necessary information and checks the responses for format errors. An entry editor is provided to allow corrections. Facilities are provided for modification, addition, or deletion of entries. You may also view the entire on command. The editor provides a fast and easy method of correcting errors without re-entering the entire data base.

Due to the large amount of data reduction required for complex problems, speed is very important. The reduction process is therefore accomplished with fast and efficient assembly language code. Without it, the program run time would be greatly increased.

Price: \$34.95 North Star Diskette
\$37.45 8" CP/M MBASIC Disk

LOGIC SIMULATOR

(Apply Only; 48K RAM)

There are two ways to test a circuit design: build a prototype and experimentally examine all the input/output conditions, or probe the circuit's performance using LOGIC SIMULATOR. The latter approach is faster and less expensive, as well as being more amenable to rapid design iterations.

The circuit elements which may be treated by LOGIC SIMULATOR include the following:

- Multiple Input AND, NAND, OR, NOR, EXOR and EXNOR Gates
- Inverters
- J-K and D Flip-Flops
- One Shots

Inputs may be clocked in with varying clock cycle lengths and displacements. Change of state delays may be introduced to test for real life glitches and rare conditions. The response of the system is available for display every clock cycle and, at the user's option, a timing diagram for any given set of logic nodes (including the inputs) may be simultaneously plotted using HIREX graphics.

All this is accomplished with a simulation language (operated through BASIC) designed specifically for this task. This language is both easy to learn and quick to use.

LOGIC SIMULATOR is also ideal for use in the classroom where the student may design logic circuits and quickly test them. Another quality engineering program from DYNACOMP!

Price: \$24.95 Cassette
\$28.95 Diskette

MAIL LIST 2.2

(Available for Atari, Apple, and North Star)

This is an invaluable program for the management of extensive lists of names and addresses. The file structure used in MAIL LIST 2.2 maximizes the total number of entries which can be stored on each disk (typically over 2200 addresses for a double density system). Some of its many options include alphabetic and zip code sorting (over any length zip code). Data files can be accessed by DYNACOMP's SORTIT program (\$29.95 North Star Only) to provide fast assembly language sorts (1000 names or zip codes sorted in less than 5 seconds!) Other options consist of file merging, additions and deletions, label printing (1, 2, or 3-up) and three different printout formats. MAIL LIST 2.2 will even find and delete duplicate entries!

One of MAIL LIST 2.2's most powerful features is a virtually unlimited keyword selection capability. Any number of user-defined keywords may be employed for each entry. Entries can be selected by keyword or unique combinations of keywords, by name or by zip code or zip code range! Once selected, entries can be written to the printer for producing address labels or a special one line format can be employed for convenient record keeping. Selected entries can also be added to other data files making MAIL LIST 2.2 one of the most versatile programs of its kind regardless of cost.

Price: \$34.95 Diskette

OPTION CODES:

START = START NEW FILE
A = ADD TO LIST
DF = DELETE WITH FLAG
DP = PURGE FLAGGED ENTRIES
DUP = DELETE DUPLICATES
N = NAME SEARCH
K = KEYWORD SEARCH
R = REVIEW LIST
W = WRITE LABELS
M = MERGE LISTS
Z = ZIP CODE SORT
ABC = ALPHABETIZE
STEP = STEP THROUGH LIST
OUT = SELECT OUTPUT DEVICE
F = OPEN NEW FILE
(W) = WRITE SUFFIX
(W) = WRITE SUFFIX
(L) = LIST SUFFIX
(F) = FILE SUFFIX

ENTER OPTION: Z
ZIP CODE SORT (SO) OR SEARCH (SE)? SE

ENTER ZIP CODE RANGE, LOW TO HIGH.
LOWEST ZIP CODE? 14000
HIGHEST ZIP CODE? 15000
DEFEAT KEYWORD PRINTOUT? Y

PROFESSOR W. R. PARKS
113 CENTRAL AVENUE
FREDONIA, NY 14063

D. LOCKWOOD
50 WOODMERIE DR.
TONAWANDA, NY 14150

J. G. TOURALCHUK
136 CROWLEY AVE.
BUFFALO, NY 14207

SORTIT

(North Star Only)

SORTIT is a general purpose sort program written in 8080 assembly language. This program will sort most any sequential datafile generated by North Star BASIC. Primary and optional secondary keys may be numeric or one to nine character strings. SORTIT is easily used with files generated by DYNACOMP's MAIL LIST program, and is very versatile in its capabilities for all other BASIC datafile sorting.

For general use on North Star BASIC sequential datafiles, SORTIT may be configured to provide the following features:

1. Definition of a delete key that will not copy data records to the destination datafile if the record contains a match on the delete key.
2. Definition of a primary key, and optionally a secondary key, that may be a numeric field (non-standard BASIC numeric precision is supported), or a one to nine character string. The entry may be located in the field as left-justified, fixed, or right-justified.
3. Data records may be fixed format or contain field counter value that defines the number of fields present in this particular record.
4. Single or multiple disk drives are supported as well as single/double density and single/double sided drives.
5. A version for execution at 2A00H and a second version for 2D00H is provided.
6. Files may be sorted in ascending or descending order.
7. A control-c keyboard entry during processing will return a current status report.
8. A final status report is displayed at completion of the sort.
9. A customizing process is used to define memory size, fixed length record size for random access files, keyboard delete character definitions, turnkey operation set-up, I/O port definitions and upper case/lower case conversion options.

Price: \$29.95 Diskette

FORM LETTER SYSTEM

(Available for Atari, Apple, and North Star)

FORM LETTER SYSTEM (FLS) consists of a mini-text editor and mail list generator. With it, the user has the capability of creating, editing, and storing letters as well as building and updating mailing lists. "Personalized" form letters are produced by inserting each address into the designated portion of your letter. FLS will also print out the addresses onto standard self-adhesive label stock (1 up, 15/16" x 3").

FLS is a most convenient time and money saver. We especially recommend that FLS be combined with MAIL LIST 2.2 to give the user the utmost in record management.

Price: \$21.95 Diskette

FLS and MAIL LIST 2.2 may be purchased together for a combined price of \$49.95.

PERSONAL FINANCE SYSTEM

(Available For Atari and North Star)

The PERSONAL FINANCE SYSTEM (PFS) offers the user one of the most complete financial management packages available, allowing the individual or small businessman complete flexibility in maintaining all aspects of financial record-keeping. Depending on configuration, you will be able to store from 300 to 2000 transactions on each disk.

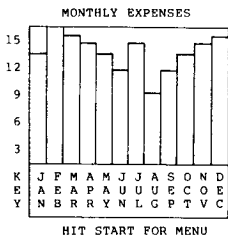
Records are easily entered into the master file and can be accessed by payee or by a user defined code (you may assign up to 26 different categories). PFS will keep track of all tax deductible items, bank deposits, monthly charges, cash payments, etc. It will even automatically deduct any check fees if desired. You will be able to get financial summaries for any category on a per item, monthly, or yearly basis. PFS will print the results in detail or summary form, access the printer if you have one, and even plot the results on a monthly bar graph!

PFS is available on diskette only. The Atari version includes DOS 2.0 on the diskette and utilizes that computer's sound, color, and graphics capabilities. The Atari version requires only 24K to operate; the North Star version, only 32K!

DYNACOMP is certain that you will find PFS to be one of your most valuable programs.

Price: \$34.95 Diskette

DYNACOMP FINANCE DIRECTORY	
DOS.....SYS (01)	MENU.....(02)
CREATE.....(03)	ADDDATA.....(04)
FIXIT.....(05)	UTILITY.....(06)
BALANCE.....(07)	SELECT.....(08)
MONOGRAPH....(09)	SORTPAYE....(10)
SUMPAYEE....(11)	
334 FREE SECTORS	
NOTE: DATA FILES NOT LISTED.	
SELECTION ?	



SPELLGUARD™

(CP/M Only)

SPELLGUARD (By ISA, Menlo Park, CA) is a revolutionary new product which increases the value of your current word processing system (Wordstar, Magic Wand, Electric Pencil, Text Editor II, and others). Written entirely in assembly language, SPELLGUARD rapidly assists the user in eliminating spelling and typographical errors. Mistakes are found by reading through the text file and comparing every word in the user's document with the words in one of SPELLGUARD's dictionaries. Words not found in the dictionary are mismatches and possible errors. These mismatches are presented to the user one at a time. For each word, the user is given three choices:

- o Mark the word with a special character.
- o Add the word to the SPELLGUARD dictionary.
- o Ignore the word; do not add to dictionary.

SPELLGUARD comes with approximately 20,000 of the most frequently used English words in its dictionary. This dictionary is greatly expandable, limited only by the amount of disk space available.

When the proofreading is completed, the user ends the SPELLGUARD program and runs the word processor using the FIND command to display and correct all of the words marked by SPELLGUARD as incorrect.

SPELLGUARD is fast; it will completely proofread a 5,000 word file in 40 seconds! It is not fooled by hyphenated words or apostrophes. It is also very easy to learn and to use. SPELLGUARD is thoroughly documented and comes complete with a 120 page user's manual. This manual contains comprehensive, step-by-step examples of every SPELLGUARD function. Most administrative staff familiar with word processing equipment will be able to use SPELLGUARD in only a few minutes.

Price: \$269.95 8" CP/M Compatible Disk
\$ 20.00 Manual Alone

TEXT EDITOR II

(CP/M MBASIC Only)

This is the second release version of DYNACOMP's popular TEXT EDITOR I. The first version has been available to the public for more than two years. We have now retired TEXT EDITOR I and have replaced it with the more powerful and even easier to use TEXT EDITOR II.

TEXT EDITOR II is a line oriented text processor. With this editor, you may build files in chunks and later quickly assemble them for display. Blocks of text may be appended, inserted, or deleted. Text files may be saved on disk/diskette in right justified/centered format to be later printed by either TEXT EDITOR II or the other CP/M facilities. In addition, CP/M files which were saved in ASCII format (including BASIC and assembly language programs) may be read by TEXT EDITOR II and processed. In fact, text files may be built employing CP/M's ED and later formatted using TEXT EDITOR II.

On the whole, TEXT EDITOR II is an inexpensive, easy to use, but very flexible text editing system.

Price: \$29.95 5¼" North Star CP/M Diskette
\$33.45 8" CP/M MBASIC Disk

DFILE

(For North Star Only)

The North Star user soon learns that the rapidly accumulating stack of diskettes represents an organization problem. Shuffling through this stack to find a particular program or file is often frustrating.

The DFILE user, however, is able to quickly locate any desired file or program. Each diskette is assigned a four character ID and the list of its files is maintained on a special data base system diskette. The simple menu selections in DFILE allow complete maintenance of this data base. DFILE may be used on single/double density and single/double-sided drives, and can be customized to use either one or two drives.

The program is also provided in two versions for execution at 2A00H or 2D00H. A list of available menu selections is shown below:

- 1 - LIST DISK DIRECTORY
- 2 - ADD COMMENTS TO DFIL ENTRY
- 3 - DELETE FILE ENTRY IN DFIL
- 4 - LIST DFIL
- 5 - LIST ALL ENTRIES FOR FILE NAME X
- 6 - LIST ALL ENTRIES FOR DISKID X
- 7 - ADD DISK DIRECTORY TO DFIL
- 8 - INITIALIZE DFIL

Menu selection 7 copies entries from the user disk directory into the data base file.

Menu selection 5 quickly lists all diskette locations of a particular file or program.

Menu selection 6 lists all files which are on a particular diskette.

The other menu selections allow the user to maintain current information in the data base.

DFILE is a must for any North Star user having an extensive diskette library.

Price: \$19.95 Postpaid

COMPARE

(For North Star Only)

COMPARE is a utility software package which compares two North Star BASIC programs and displays the file sizes of the programs in bytes and the lengths of the programs in terms of the number of statement lines. The line numbers at which differences occur between the two programs are then printed out.

COMPARE permits the user to examine the various versions of his software to verify which are the most current and to clearly identify the changes made during development. Perhaps that "latest" version does not work as well because of that one particular change you made three weeks ago! Or, was that change really incorporated?

COMPARE is very easy to use and requires only one disk drive. The first program is stored in RAM and the second on disk. The user is clearly and simply prompted for the type of comparison to be made.

Price: \$12.95

FINDIT

(For North Star Only)

Use FINDIT to quickly locate: address, phone, birthday, anniversary, and appointment dates for your friends; address, phone, balance owed, appointment dates for commercial contacts; descriptive information for reference entries which may be accessed with one, two or three keywords. Each personal keyword (for example, a last name) accesses a record in the data base which contains name, address, phone and birthdate information, as well as anniversary dates, appointment dates and comments. Each commercial keyword accesses one to five records each of which contains business name, address, phone, balance owed, appointment dates and comments.

A list of the available procedures is shown below:

- 1 - FIND PERSONAL ENTRY
- 2 - FIND COMMERCIAL ENTRY
- 3 - FIND REFERENCE ENTRY
- 4 - ADD NEW ENTRY
- 5 - DELETE AN ENTRY
- 6 - ADD KEYWORD
- 7 - DELETE KEYWORD
- 8 - DISPLAY BIRTHDAYS/ANNIVERSARIES
- 9 - DISPLAY APPOINTMENTS
- 10 - DISPLAY KEYWORDS
- 11 - CHANGE AN ENTRY
- 12 - INITIALIZE FILES
- 13 - LIST ALL PERSONAL/COMMERCIAL NAMES/ADDRESSES

Menu selections 1, 2, and 3 locate and display machine records.

Menu selection 8 will ask you for start and end months and will display all personal records with matching birthday or anniversary date.

Menu selection 13 will display the names and addresses of all personal and commercial records.

The other selections provide convenient entry and maintenance of the file.

FINDIT is certainly a useful information retrieval program for the computerist attempting to stay organized in a complicated world.

Price: \$19.95 Postpaid

COMPRESS

(For North Star Only)

COMPRESS is a North Star disk-based utility program which permits significant shortening (in both size and execution time) of BASIC programs. With COMPRESS, unnecessary spaces are removed from any program, regardless of size. In addition, remark statements may either be retained or removed at the user's option.

COMPRESS directly operates on the BASIC file as it exists on the diskette. The original program is scanned line by line and a separate and compressed program correspondingly written. Even a program which is too large to be loaded can be processed by COMPRESS and possibly reduced to a loadable size.

Price: \$12.95 Postpaid

THE COMMUNICATOR

(Atari Diskette Only)

THE COMMUNICATOR is a menu-driven collection of programs which are designed to facilitate two-way telephone communication between your Atari and other computers, such as information networks and time-share systems. These programs have very special features which dramatically reduce the time required to transfer information to or from your Atari. Since the phone company and most networks charge according to connect time, THE COMMUNICATOR can easily pay for itself through reduced service charges.

THE COMMUNICATOR works as follows. Suppose you wish to read a large information file which is available from THE SOURCE (a popular service). Without THE COMMUNICATOR you might use Atari's TeleLink program to list the information one screen frame at a time, frequently pausing in order to read the data (e.g., stock quotations). Alternatively, the data could be directly sent to your printer for later study. Both methods are effective, though they are slow and, therefore, costly. THE COMMUNICATOR provides both of those modes of operation, plus the additional option of quickly storing the complete exchange on diskette. In this way, the data is permanently stored on the diskette and may be conveniently recalled later.

THE COMMUNICATOR has several other important features, including one designed for use with time-share systems. Consider the situation in which you wish to write a program for a time-share computer. Ordinarily, the program would be built and edited at length while connected to the other computer. With THE COMMUNICATOR you can turn the Atari into a very intelligent terminal at which you may create the program (in BASIC, FORTRAN, PASCAL, etc.) off-line using the Text Editor program which is part of THE COMMUNICATOR. The Atari may then be connected to the time-share computer and the program quickly loaded, again saving connect time. Further, when you run the program, all the results (and responses) may be saved on diskette.

THE COMMUNICATOR requires the following equipment:

- An Atari 400 or 800 computer with at least 24K of RAM (Random Access Memory).
- An Atari 850 interface module.
- A 300 baud modem (e.g., an Atari 830).
- An Atari disk drive.
- Optionally, an Atari 825 (or equivalent) printer.

Operationally, it is required that the other computer communicate in the full duplex mode at 300 baud.

Price: \$49.95 Diskette

The Atari 830 modem is available from DYNACOMP for \$189.95. This price includes the cable required to connect the modem with the interface module. The Atari 830 modem and THE COMMUNICATOR may be purchased together for a combined price of \$229.95.

ANALYSIS OF VARIANCE

(ANOVA)

ANOVA is actually four programs in one. Each program performs a specific task matched to the designed experiment under analysis.

1. A one-way ANOVA produces the treatment sum of square, mean square, and F ratio along with the error mean square. This algorithm accepts unequal numbers of replicates per treatment level and unlimited numbers of treatment levels and replicates.
2. Two-way ANOVA performs an analysis of either fixed or random factors with equal numbers of replicates (repeat measurements) per cell. There is no practical limit on the number of levels or replicates. Sums of squares and mean squares are printed for both factors and the interaction as well as the error sum of squares and all F ratios.
3. The "N-way" (for N up to 5 factors) will accept up to 4 levels per factor or any combination of levels not to exceed 1024 treatment combinations in 16K of core. Sums of squares and mean squares for all main effects and up to 3 factor interactions are computed. The appropriate (residual or pure error) mean square is used to compute the F ratios.
4. YATES analysis computes the mean square and half effect for two level factorial and fractional factorial experiments. All main effects and interactions are computed and printed out.

In all programs except the YATES, the means for the main factors are printed. Unlike many large computers, FORTRAN-based ANOVA systems, data entry is interactive and at the user's option. A data file may be created for editing and re-entry at a later time.

Documentation includes a guide to experimental design and methods to compute components of variance for the random model ANOVA. Examples and test data are provided to allow the user to practice with known information before applying the programs to their own data.

Price: \$39.95 Cassette
\$43.95 Diskette
\$46.45 8" MBASIC Disk

ROOTS

If you want to determine the zeroes of a polynomial having real coefficients, ROOTS is the program for the task. ROOTS employs a relatively little known algorithm described in the computer mathematics literature several years ago. This algorithm iteratively seeks all the roots simultaneously. The convergence is cubic (and therefore rapid) and very stable, requiring no explicit initial guesses from the user. Accuracy is usually within two digits of the precision of the BASIC employed. In addition to displaying the calculated solutions, the program also shows the results of substituting those values into the original polynomial. Convergence failure is highly unlikely and, if it occurs, it is generally limited to special multiple (M-2) roots. Any order polynomial may be treated.

Price: \$10.95 (Cassette)
\$14.95 (Diskette)
\$17.45 (8" MBASIC Disk)

REGRESSION I

REGRESSION I is a complete and coordinated regression curve fitting package for the analysis of linear and non-linear, one-dimensional data. It is based on various sub-routines and techniques presented in Volumes 1 and 2 of BASIC Scientific Subroutines (by F. Ruckdeschel; to be published by McGraw-Hill, Fall 1980). REGRESSION I provides many of the facilities available on large FORTRAN-speaking machines and more. However, unlike many of the FORTRAN equivalents, there is no confusion as to the input/output variable formats, and the software is very easy to use. In addition, the analysis is interactive, thereby permitting the user considerable freedom in experimenting with fitting functions and orders of approximation. Also, a special algorithm is employed to determine the coefficients which has round-off error properties much superior to the matrix algorithms commonly used. This greatly reduces the need to perform the calculations in double precision or pre-process the data.

The features of REGRESSION I include:

1. Easy data entry and editing.
2. Automatic data sorting and plotting (of both the data and fitted curves).
3. Fast and accurate regression.
4. A choice of many fitting functions, including forms supplied by the user.
5. Analysis of the standard error of the derived coefficients and the correlation coefficient.
6. Data storage and retrieval.

Once the regression has been performed, the user may immediately repeat the analysis using the same data set (with editing if desired) and test other functional forms.

REGRESSION I is not only a powerful statistical tool for use in the engineering, business and social sciences, it is educational as well. Because the program presents the regressed coefficients as well as their estimated error bounds, the student may learn by experience how much credence to place on the derived coefficients. In addition, he/she may also get a feel for the general types of fit associated with various levels of correlation. It is very easy for the inexperienced experimenter to be tricked by regression results, especially those having high R^2 values. REGRESSION I is designed to guard against this.

Price: \$19.95 Cassette
\$23.95 Diskette
\$26.45 8" CP/M MBASIC Disk

REGRESSION II

(PARAFIT)

PARAFIT is a parametric least squares regression program designed specifically for the determination of the non-linear coefficients in complicated mathematical expressions. This is to be contrasted with the linear polynomial coefficients calculated by REGRESSION I.

A typical problem suited for analysis by PARAFIT might be the following. Information has been collected on the failure rate of a particular product. This information is in the form of the normalized fraction of items which failed per unit time interval after production. The times at which these data were collected may not be equally spaced such that the set consists of many (f_i, t_i) pairs. The functional form assumed is the Weibull distribution.

$$f(t) = \left[\frac{vt^{(v-1)}}{u^v} \right] \exp \left[-(t/u)^v \right]$$

Given the (f_i, t_i) data pairs, what are the least squares regression values for the parameters u and v ?

PARAFIT may be used to solve this problem. The user inserts the functional form as a BASIC program statement and runs PARAFIT. The program employs a special form of modified steepest descent to interactively determine the unknown parameters.

Features included in PARAFIT are automatic plotting of both the data and fitted function; cassette (or diskette) data saving and loading; and data file building/editing.

PARAFIT was designed to be easy to use as well as effective, and is an excellent companion to REGRESSION I.

Price: \$19.95 Cassette
\$23.95 Diskette
\$26.45 8" CP/M MBASIC Disk

COLLECTIONS

DYNACOMP offers reduced prices on these following collections:

REGRESSION I, REGRESSION II and MULTILINEAR REGRESSION are available for:

\$51.95 (3 Cassettes)
\$63.95 (3 Diskettes)
\$69.95 (3 8" Disks)

FOURIER ANALYZER, TRANSFER FUNCTION ANALYZER and HARMONIC ANALYZER are available for:

\$49.95 (3 Cassettes)
\$59.95 (3 Diskettes)
\$64.95 (3 8" Disks)

MULTILINEAR REGRESSION

This is the third program in the DYNACOMP statistics series. Whereas Regression I and Regression II (PARAFIT) are designed for analyzing bivariate data, MLR is capable of treating multivariate situations with no limit (other than available computer memory) on the number of dimensions. The general form of the equation fitted will be $Y = af_1(X_1) + bf_2(X_2) + cf_3(X_3) + \text{etc.}$ The variables are the X_i . The regressed coefficients are a, b, c , etc. The functional forms, $f_i(X_i)$, may be virtually anything. MLR automatically offers a choice of nine mathematical forms, including the logarithm and exponential, as well as the simple default $f_i(X_i) = X_i$. In addition, the user may replace the default form with his own function. These choices can be independently made for each dimension.

The data input to MLR may be either from the keyboard or from cassette/disk files. Data may be loaded, saved, added to, deleted, and generally edited using the convenient data manipulation procedures provided. The number of data points is limited only by the computer memory available.

The outputs from MLR are the regression coefficients and the standard error associated with these coefficients. Such error estimates are very useful, but often neglected by regression programs. MLR also supplies the standard error of the estimate for the fit and the correlation coefficient. Finally, MLR offers the opportunity to use the regressed equation to calculate values along the fitted hyper-curve.

Operationally, MLR employs two distinctly different methods for finding the regression coefficients. The first method uses matrix algebra techniques and is quite fast. The second method utilizes a very stable form of steepest descent optimization. This second approach is much slower in execution, but requires significantly less computer memory and can handle "ill-conditioned" situations with high accuracy. Also, with this technique, the fit is made one dimension at a time, and the coefficients and standard error of the fit are displayed at each step.

Price: \$24.95 Cassette
\$28.95 Diskette
\$31.45 8" CP/M MBASIC Disk

DATA SMOOTHER

(Not available for the Atari)

This package provides the user with a fast and easy means to least-squares smooth equally spaced data and plot the results. Any size data set may be treated within the memory limits of your machine. The variation in each data point is smoothed according to the weighted average of points surrounding it. The averaging span is 3 to 25 points. The order of the local smoothing is linear to quintic (first to fifth degree polynomial). Also calculated are the smoothed first and second derivatives of the data at each point.

The width of the plot is user-controlled. The software automatically considers the printer width chosen and number of data points to produce a graph having a good aspect ratio.

This program is very useful for smoothing out day-to-day stock market fluctuations in order to determine underlying trends. It is also beneficial to the businessman in planning inventory based on varying sales volume. The scientist and engineer may apply the smoothing software to noisy data sets. Communications engineers can apply it to incoming data as a "digital filter."

Price: \$14.95 Cassette
\$18.95 Diskette
\$21.45 8" CP/M MBASIC Disk

HARMONIC ANALYZER

HARMONIC ANALYZER is the third in DYNACOMP's series of Fourier transform software packages. Whereas FOURIER ANALYZER and TRANSFER FUNCTION ANALYZER (TFA) were designed with limited duration signals in mind, HARMONIC ANALYZER is specific to repetitive waveforms (cyclic processes).

All the data entry, storage, retrieval, and editing features of TFA have been included, as well as the signal and transform plotting functions. The Fourier Integral has been replaced with a Fast Fourier Transform (FFT) routine which is the essence of the harmonic analysis. A cubic spline interpolation procedure has been added so that the user may transform irregularly spaced data. Also, the data need not be entered in temporal order; it is sorted before being transformed.

The spline interpolation and sorting features are unique to HARMONIC ANALYZER and will be appreciated by those familiar with other FFT programs which require the data to be both in order and evenly spaced. The spline interpolation scheme was in particular chosen over others to minimize the unwanted interpolation oscillation ("ringing") associated with abrupt signal changes, such as square wave steps.

The FFT employed is a base-2 algorithm; that is, the number of data points must be an even power of 2. This places a small restriction on the input data set, but increases the speed of the transform calculation.

HARMONIC ANALYZER is a program which should be in the software library of every scientist, engineer, or experimenter who deals with repeating waveforms.

Price: \$24.95 Cassette
\$28.95 Diskette
\$31.45 8" CP/M MBASIC Disk

FOURIER ANALYZER

FOURIER ANALYZER is a scientific program which can be applied to examine the frequency spectrum characteristics of defined duration signals, such as groups of pulses. The user inputs a data set which is Fourier transformed into the frequency space descriptors of amplitude and phase. The amplitude and phase results are displayed in tabular form. The input data and calculated results may also be plotted at the user's option.

Shown below are plotting examples in which the input data represented a square wave shifted off the origin. The amplitude plot clearly shows the characteristic "sinc" function form. The phase plot shows the expected discrete phase changes associated with the "sinc" function superposed on the linear phase change expected from the Shifting Theorem.

The input data set is limited in extent only by the memory size of the host computer, and is not restricted to equally spaced values.

FOURIER ANALYZER is certainly a powerful and educational tool for the engineer, scientist, student, or anyone involved in cyclic phenomena (e.g., music, stocks, etc.).

Price \$16.95 Cassette
\$20.95 Diskette
\$23.45 8" MBASIC Disk

TRANSFER FUNCTION ANALYZER

TRANSFER FUNCTION ANALYZER is a frequency spectrum analysis package designed with the engineer in mind. It applies the concept of the Fourier integral transform to an input data set to provide a frequency domain representation of the function approximated by that input data. TFA is based on DYNACOMP'S popular FOURIER ANALYZER, but includes special data handling features. It also presents the results in conventional engineering terms (decibels, log-frequency).

The user may save and recall both the input data file and previously calculated results. Data files may be loaded (from cassette, diskette, or disk), added to, deleted from, and generally edited. As with FOURIER ANALYZER, the input data may be plotted before the calculations are started. The frequency domain results may also be plotted, as well as saved (to be later recalled for new plots). In addition, the analyses are easily separated with different frequency parameters without re-entering the data.

The transformed results are displayed in conventional engineering form. The amplitude points returned are in decibels (DB) relative to the peak value (0 DB). The phase is in degrees. The frequency transform is calculated in equal log-frequency intervals as is common practice in Acoustical and Electronic Engineering.

The frequency results may be optionally plotted. When the amplitude plot is performed, it is in decibel/log-frequency format. This permits easy identification of the characteristic "roll-off" in frequency response. For example, a 9 DB/octave (e.g., 10 log (F(W))) straight line roll-off of a three pole filter is immediately apparent from the plot.

TFA was originally designed as part of a consulting assignment involving the analysis of amplifier transfer function. It is, therefore, a program which has been tested in an actual commercial application. In this particular case, the output data corresponding to the real time response of an amplifier to an input pulse ("delta function") was used directly as input to TFA, and the frequency amplitude results directly gave the transfer function for the amplifier.

Whereas DYNACOMP'S FOURIER ANALYZER is well suited to the basic science and educational fields as well as many engineering applications, TRANSFER FUNCTION ANALYZER is a key tool for the electronics and acoustics engineer involved in the analysis of limited duration signals.

Price: \$19.95 Cassette
\$23.95 Diskette
\$26.45 8" CP/M MBASIC Disk

DIGITAL FILTER

DIGITAL FILTER is a comprehensive data processing program which permits the user to design his own filter function or choose from a menu of filter forms. The filter forms are subsequently converted into non-recursive convolution coefficients which permit rapid data processing. In the explicit design mode, the shape of the frequency transfer function is specified by directly entering points along the desired filter curve. In the menu mode, ideal low pass, high pass and bandpass filters may be approximated to varying degrees according to the number of points used in the calculation. These filters may optionally also be smoothed with a Hanning function. In addition, multi-stage Butterworth filters may be selected. Features of DIGITAL FILTER include plotting of the data before and after filtering, as well as display of the chosen filter functions. Also included are convenient data storage, retrieval, and editing procedures.

The format of the data storage is consistent with that used by REGRESSION I, REGRESSION II, TRANSFER FUNCTION ANALYZER, and HARMONIC ANALYZER. This permits the user to selectively filter data before processing by any of the above programs.

Price: \$29.95 Cassette
\$33.95 Diskette
\$36.45 8" CP/M MBASIC Disk

BASIC SCIENTIFIC SUBROUTINES

(Not Available for Atari)

BASIC SCIENTIFIC SUBROUTINES, VOLUME I by F. Ruckdeschel (published by BYTE/McGraw-Hill; see the January 1981 issue of BYTE Magazine, page 173) is the first in a series of books designed to provide microcomputer users with scientific subroutines written in BASIC. These subroutines have been designed to facilitate the application of microcomputers to scientific tasks which have previously been largely in the domain of the large timeshare mainframe computers.

Through arrangements with the author and BYTE/McGraw-Hill, DYNACOMP has become the exclusive distributor of three software packages keyed to the above text. Each package includes programs organized by chapter and accessed/demonstrated by a special menu program written especially for DYNACOMP. Unlike other software packages commercially available which are keyed to texts, you do not have to search the tape (diskette or disk) to load a particular program. They are all loaded in one step and are called according to the menu selection. This makes life much easier for the user.

Because of the total length of the software listed in the text (greater than 33 kilobytes), three collections have been organized:

Collection #1:

Chapter 2 - Alphanumeric Data Plotting

- Equally Spaced Data
- Arbitrarily Spaced Data

Chapter 3 - Complex Variables

- Polar Coordinate Conversion
- Addition, Subtraction, Multiplication, Division
- Powers and Roots
- Spherical Coordinate Conversion

Collection #2

Chapter 4 - Vector and Matrix Operations

- N-vector Addition, Subtraction, Multiplication (dot and cross products)
- N-vector Lengths
- Angles Between Vectors
- Matrix Addition, Subtraction, Multiplication, Transposition, etc.
- Row Operations
- Cofactors, Determinants
- Inversion
- Eigenvalues
- Exponentiation

Collection #3

Chapter 5 - Random Number Generators

- Uniform, Normal, Poisson, Binomial
- Exponential, Fermi, Couchy, Gamma, Beta
- Wetball

Chapter 6 - Series Approximations

- Sine, Cosine, Arctangent
- Natural, Base-10 Exponent and Logarithm

Price: \$14.95 per collection (Cassette)
\$18.95 per collection (Diskette)
\$21.45 per collection (8" Disk)

Accompanying each collection is documentation which describes how to use the associated menu program. Detailed descriptions of input/output parameters and the algorithms employed in the subroutines are to be found in the text BASIC Scientific Subroutines, Volume I which DYNACOMP also distributes (\$19.95 plus 75¢ for extra postage and handling). The three collections may be purchased for a combined price of \$39.95 (three cassettes) or \$49.95 (three diskettes).

ORDER FORM

PROGRAMS

COMPUTER
SYSTEM

PRICE

PROGRAMS	COMPUTER SYSTEM	PRICE

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