

INDUS GT™

DOS XL Operator's Guide

By Keith S. Burgoyne

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DOS XL™ Operator's Guide
for Drivers of the
Indus GT™
Atari™ Compatible Diskette Drive

by Keith S. Burgoyne

For DOS XL Version 2.20
This guide was last revised on December 14, 1983

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PREFACE

DOS XL is the result of the efforts of several persons, and we believe that proper credit should be given. The original version of the Console Processor and the original version ("version 2") of the File Manager System (which is, of course, identical with Atari's DOS 2.0S) were written by Paul Laughton. The current versions of all other portions are primarily the work of Mark Rose, of Optimized Systems Software, with the collaboration of Bill Wilkinson and Mike Peters.

DOS XL SERVICE AND SUPPORT POLICIES

Indus Systems has worked to bring you products which will give you years of reliable service and enjoyment. As with any software product, though, errors or omissions can and do occur. You may rest assured that, if you have a problem, every reasonable effort shall be made to help you.

In order to receive full support, you will need to direct any questions and/or problem reports about DOS XL strictly to Indus Systems. In many cases, Indus Systems has made special enhancements to the copies of DOS XL distributed with the Indus GT diskette drives in order to increase the operating system's already extensive capabilities. Because of these enhancements, Indus GT users should always contact Indus Systems for assistance and never Optimized Systems Software.

Since DOS XL is only distributed by Indus Systems to Indus GT users as a sub-licensed product, you must sign and return the Indus System's Sub-License Agreement included with your DOS XL before we can respond to your inquiries.

If you have a quick question or simply a procedural problem, you may call the Consumer Support staff at Indus Systems. Full consumer assistance is provided between the hours of 9:00 AM to 4:00 PM Pacific Time.

Although Indus Systems attempts to provide the best consumer support possible, please understand that many consumer problems can tend to be of a nature which the support staff may have never before encountered and may require a little research by our staff. Because of this, the person providing you with assistance may not be able to answer all your questions in a 5-minute telephone call. So, if your problem is such that it is not easy to describe, you are invited to mail us a letter and include a diskette or computer printout detailing or demonstrating your difficulty. Always remember to include both your return address, telephone number(s), the hours (for your time zone) you can be reached at the various

telephone number(s) provided, and also the name and city of the Indus GT dealer from whom you purchased your Indus GT(s). In many cases, our support staff may wish to contact your dealer should they determine that local assistance would be of the best benefit.

ABOUT THIS GUIDE

DOS XL is the latest in a series of Disk Operating Systems produced by Optimized Systems Software, Inc.

DOS XL version 2.20 is a direct successor to and completely compatible with
Atari DOS 2.0S
OS/A+ version 2.0
OS/A+ version 2.1

This Indus GT edition of the DOS XL manual has been issued as what we hope is a user-friendly "guide" to the more commonly used features of the operating system. This guide does not attempt to delve into the deep dark inner workings and extra-advanced features of the DOS. We feel that such an attempt would only serve to confuse the beginning user. But! For the advanced user, we have available a separate DOS XL Reference Manual which discusses all those little goodies which advance users always like to know about.

Exactly which manuals and sections of manuals you should read depend on your experience level and your purposes:

If you will never program in any language or you will only be programming in Atari BASIC, you may not need to read any more than this guide.

If you are an assembly language programmer, we suggest you read our DOS XL Reference Manual.

Finally, if you would like to automate DOS XL, allowing it to do several tasks for you while your computer is unattended, you need to read the DOS XL Reference Manual.

Of course, regardless of your experience level or purposes, if you get tired of the restrictions of the DOS XL menu, you should at that point adventure into the world discussed in the DOS XL Reference Manual.

Whatever you choose to do, we hope that this guide, possibly supplemented by the reference manual, will help you. Written suggestions about these manuals are always helpful and carry much more impact than verbal comments. Your letters are always welcome.

Section O: YOUR INDUS GT AND DOS XL

O.1 How Do You Get Started Using Your Indus GT and DOS XL?

It seems that new Indus GT users, whether or not the Indus GT is their first Atari diskette drive, always want to do one thing right away: see their new Indus GT operate in double density. Although we at Indus Systems would really recommend that every new user start with the DOS XL basics in order to get familiar with DOS XL and their Indus GT, we hereby submit to the majority's desires and provide, right here in the front of this guide, some quick instructions on how to get your Indus GT to operate in double density.

The first step in using double density is to create a double density version of your single density DOS XL System Master Diskette which came with your Indus GT. Which sections of this guide you need to read in order to do this depends upon your own experience level.

If you have never used any diskette drive or DOS before, you should read all of the "Introduction" section. This section will provide you with some background information which the rest of this guide will expect you to know. In addition, you should read the "Getting Started With DOS XL" section to find out how to get DOS XL started on your Atari.

If you are already familiar with using a non-Atari DOS but not a DOS on the Atari, you should read "What About Double Density?". Even if you are already experienced with single and double density on non-Atari DOS's, be sure to read the "What About Double Density?" section. Atari DOS's, in general, do not work with double density like most other computers' DOS's.

All users should read "How Do You Keep Your DOS XL Diskette Safe?". Although our consumer support staff is always very nice and polite to any user who calls, you

might find yourself a little embarrassed calling us because you've accidentally ruined your DOS XL System Master Diskette.

All users should also read "How Do You Initialize Different Density Diskettes?". This section explains how to create a diskette which is in double density; but don't stop there. This new double density diskette will only contain the bare minimum of DOS XL itself. You will also need to read "How Do You Copy Between Densities With Only One Indus GT?" or "How Do You Copy Between Densities Using Two Drives?", depending on whether you have more drives than just a single Indus GT.

Once you've followed all the directions in the sections of this guide indicated above, you can feel very confident that your Indus GT is operating in its normal finely-tuned state.

PROBLEM PREVENTOR: Never use the front panel buttons on your Indus GT to select the drive's emulation mode (as described in the Indus GT drive manual) when using DOS XL. There is absolutely no case in which this would be proper. DOS XL provides its own commands for changing your Indus GT's emulation mode (or operating density), and these commands also notify the DOS itself of a density change which the Indus GT's front panel switches do not. Also, care must be used when changing diskettes in your Indus GT if the change involves two diskettes of different densities. Such a change is permitted, but a density change command must be given to DOS XL to notify it of the change.

PROBLEM PREVENTOR: Note that most of the instructions on how to convert to using double density with your Indus GT fall under the major section "Some Advanced Capabilities of DOS XL". If you are a new user, please take note of this. Once you've had fun running your Indus GT in double density, please go back to the more simpler sections of this guide to learn the basics of operating DOS XL before leaping too far ahead.

0.2 What About the Atari 1050's Double Density?

You Indus GT does support the Atari 1050 double density diskette format, but DOS XL does not. What does this mean? It means that if you have a copy of Atari's DOS 3.0, you can use it with your Indus GT in both single and 1050 double density modes. DOS XL does not support the 1050's double density format because this format provides only about 1.4 times (40% more) the storage capability of standard single density. DOS XL's double density format provides a full 2.0 times (100% more) the storage over single density. Whenever this guide refers to double density, it is referring to the 2.0 times double density and never the 1.4 times double density.

TABLE OF CONTENTS

0	- YOUR INDUS GT AND DOS XL	8
0.1	- How Do You Get Started Using Your Indus GT and DOS XL?	8
0.2	- What About The Atari 1050's Double Density?	10
1	- INTRODUCTION	14
1.1	- What is Required to Use DOS XL?	14
1.2	- Why Do You Need DOS XL?	14
1.3	- So What is a (Diskette) "File" Anyway?	15
1.4	- How Do You Use Your Other Non-Disk Devices?	19
1.5	- How Does DOS XL Accept Commands?	21
2	- GETTING STARTED WITH DOS XL	23
2.1	- How Do You Get DOS XL Running?	23
2.2	- What About Double Density?	24
2.3	- How Do You Use The DOS XL Menu?	26
2.4	- Is Your DOS XL Diskette Okay?	27
2.5	- How Do You Keep Your DOS XL Diskette Safe?	29
2.6	- How Do You Use Cartridge BASIC or Other Cartridges?	33
3	- THE DOS XL MENU	35
3.1	- What is the DOS XL Menu?	36
3.2	- How Do You "Copy Files"?	37
3.3	- How Do You "Duplicate (a) Disk"?	41
3.4	- How Do You "Erase Files"?	45
3.5	- How Do List The "Files On (a) Disk"?	47
3.6	- How Do You "Go to (an) Address"?	49
3.7	- How Do You "Initialize (a) Disk"?	50
3.8	- How Do You "Load (a) Binary" File?	53
3.9	- How Do You "Protect Files"?	54

3.10	- How Do You "Quit to DOS XL" Command Level?	55
3.11	- How Do You "Rename (a) File"?	56
3.12	- How Do You "Save (a) Binary File"?	58
3.13	- How Do You Go "To (a) Cartridge" From DOS XL?	60
3.14	- How Do You "Unprotect Files"?	61
3.15	- How Do You Perform An "Extended Command"?	61
4	- THE DOS XL COMMAND PROCESSOR	64
4.1	- Where Does The "Quit To DOS XL" Menu Item Leave You?	64
5	- THE DOS XL BOOT PROCESS	66
5.1	- What Happens When DOS XL Is Booted?	66
5.2	- What Do The DOS.SYS and DOSXL.SYS Files Do?	66
5.3	- What Does The AUTORUN.SYS File Do?	67
5.4	- What Does The STARTUP.EXC File Do?	67
5.5	- What Does The MENU.COM File Do?	68
6	- DOS XL AND THE 850 INTERFACE MODULE	69
6.1	- What Is The 850 Interface Module?	69
6.2	- How Do You Load The RS-232 Driver Under DOS XL?	69
6.3	- What About Errors In The 850's RS-232 Driver?	70
7	- SOME ADVANCED CAPABILITIES OF DOS XL	72
7.1	- How Do You Use Two Drives in Different Densities?	73
7.2	- How Do You Initialize Different Density Diskettes?	76
7.3	- How Do You Copy Between Densities With Only One Indus GT?	78
7.4	- How Do You Copy Between Densities Using Two Drives?	79
7.5	- What Do You Do If You Have More Than Two Drives?	80
7.6	- How Do You Increase The Number Of Files You Can Have Open?	82
8	- USING DOS XL WITH THE ATARI BASIC CARTRIDGE	84
8.1	- How Does BASIC's "CLOSE" Statement Work With DOS XL?	87
8.2	- How Does BASIC's "ENTER" Statement Work With DOS XL?	88

8.3	- How Does BASIC's "GET" Statement Work With DOS XL?	90
8.4	- How Does BASIC's "INPUT" Statement Work With DOS XL?	91
8.5	- How Does BASIC's "LIST" Statement Work With DOS XL?	93
8.6	- How Does BASIC's "LOAD" Statement Work With DOS XL?	95
8.7	- How Does BASIC's "OPEN" Statement Work With DOS XL?	97
8.8	- How Does BASIC's "PRINT" Statement Work With DOS XL?	100
8.9	- How Does BASIC's "PUT" Statement Work With DOS XL?	101
8.10	- How Does BASIC's "SAVE" Statement Work With DOS XL?	102
8.11	- How Does BASIC's "XIO" Statement Work With DOS XL?	103
8.12	- How Do You Rename A File From Atari BASIC?	104
8.13	- How Do You Erase A File From Atari BASIC?	105
8.14	- How Do You Protect Files From Atari BASIC?	106
8.15	- How Do You Unprotect Files From Atari BASIC?	107

Section 1: INTRODUCTION

This guide is intended for the beginning user of the DOS XL operating system. Many of the advanced features of DOS XL which are not required for normal usage are not discussed in this guide so as to avoid confusing first-time users. In many cases, this guide will discuss the "simpler side" of some of the more advanced features and will then direct you to the DOS XL Reference Manual for a discussion of the "advanced side" of that particular feature. The DOS XL Reference Manual is available separately from Indus Systems.

1.1 What is Required to Use DOS XL?

DOS XL will work equally well on all models of Atari computers, provided the model you are using has at least 48K of memory inside.

1.2 Why Do You Need DOS XL?

The purpose of DOS XL is to provide a way for your Atari computer (and you) to communicate with your disk drives, printer, and other peripherals. DOS XL contains commands and utilities which allow you to:

1. Organize the information and programs with which you are working into "files". This organizing is similar to the way you would organize information printed on paper using file folders and a filing cabinet.
2. Provide an easy means by which you can access this information whenever needed.

3. Make use of various pre-written specialized application programs (like word processors, spread sheets, and spelling checkers) and programming tools (like higher powered BASICs, machine/assembly language processors, and program "debugging" aids).

4. Go from using DOS XL itself, to using a cartridge inserted into your Atari, to using any of the thousands of programs sold on diskette, back to using the DOS XL itself.

But, in order for DOS XL to know exactly what you want it to do at any given moment, you need to "command" it. And "command" is truly the correct word for how you talk (using your Atari's keyboard) to DOS XL. Whatever you command DOS XL to do, it will do provided it knows how to do it and provided you have commanded it in a way it understands. Remember: DOS XL never actually "thinks" for itself (although beginners often find this hard to believe), it only does what you tell it to do regardless of whether or not what you told it is actually what you wanted it to do. Explaining to you exactly how to command DOS XL to get it to do your bidding is this guide's sole purpose in life.

1.3 So What is a (Diskette) "File" Anyways?

Much like the way a record or a cassette tape can hold a number of songs, a single diskette can hold many distinct files of information (up to 64 files per diskette). These files can hold programs or data in text (human readable), binary (computer readable), or several other forms. Just like songs on a record, diskette files must have names so that you can tell DOS XL exactly which file you wish to use. This is slightly different from that slow and old fashioned method of saving files on cassette using one of the Atari Program Recorders, since cassette files did not have to be given a name. Often, DOS XL and also this guide will refer to a "file name" as "file specification", or simply "filespec". They all essentially mean the same thing. "File specification" simply refers to your "specifying a file's name".

The rules for creating a file name which DOS XL will understand (a "valid" file name) are as follows:

The file name is divided into two parts: the first part is referred to as the "primary name" and the second part is referred to as an "extension". When you create a new file name, you should make the "primary name" section something which will remind you exactly what information you have placed into that file. For instance, "CHECKS" might refer to a file containing information relating to balancing your checkbook. The extension is normally used to indicate the type of format in which the information in that file is saved. For instance, "TXT" would refer to a text file containing a letter you have written using a word processor. Many specialized applications programs will select special "standard" extensions for you.

The primary name section of the file name can consist of up to eight capital (upper case) letters (A-Z, lower case not permitted) or numbers (0-9) arranged in just about any order your little heart desires. There is, however, one restriction: the first letter of the primary name must be a letter and not a number. The primary name section can be as short as one letter, but at least one letter must be used.

The extension section of the file name can consist of up to three letters or numbers arranged in any order, and can even start with a number. The extension is completely optional; DOS XL does not require you to specify one if you don't want one. If you do use an extension following the name section, always separate the two sections with a period (.). For instance, "CHECKS.TXT".

The following are valid file names: GEORGE, TEMP.ABS, PROG1.SAV, SORT123, COPY.COM. The following file names would not be accepted by DOS XL (illegal file names): NAMETOOLONG, TEMP.LONGEXTENSION, 1NUMBER.1ST, lowercas, NO-DASH.

The computer "hackers" who have been beating on computer keyboards for years have a sort of "standard" set of extensions which most people eventually learn sometime during their years of computer usage. To save you from waiting these years, here's a list of some of the more common extensions:

BAS for a "SAVE"d BASIC program (MYPROG.BAS)
LIS for a "LIST"ed BASIC program (MYPROG.LIS)
COM for a DOS XL command/utility program (COPY.COM)
EXC for a DOS XL execute file (STARTUP.EXC)
SYS for a DOS XL system file (DOS.SYS)
TXT for a wordprocessor or editor text file (LETTER.TXT)

In some cases, file names must be preceded by a drive specifier which tells DOS XL on which drive to search for a particular file. The format of a device specifier is:

Dn:
 (or)
D:

where n is a digit from 1 to 4, depending on how many drives you have. If you just specify D, drive 1 is assumed (this is very useful if you only have one drive). For example, D1:MYPROG.BAS tells DOS XL to use the file MYPROG.BAS on drive 1. D2:YOURPROG.LIS tells DOS XL to use the file YOURPROG.LIS on drive 2. D:MESSAGE.TXT tells DOS XL to use the file MESSAGE.TXT on drive 1.

Whenever you command DOS XL to do something which causes it to create a new file on a diskette, DOS XL adds the name of that file to something called a "directory". By maintaining this directory, DOS XL knows where each file on your diskette is located just like your address book or telephone directory tells you where all your friends and associates are located. Whenever you tell DOS XL you wish to use one of the files on your diskette, DOS XL reads through this directory, entry by entry, until it finds the entry for the file you requested.

In many cases, you will not wish to specify to DOS XL one specific file; but rather a group of files with similar names. To make this possible, DOS XL allows you to use "wild-card" characters as part of the file name. These wild-card characters will match any other letter or number when DOS XL goes searching through a diskette directory to find the file you have requested.

There are two wild-card characters DOS XL will accept. The first one is a question mark (?) which will match any single letter or number at the same position as the question mark in the file name. For instance, if the files YELL.TXT, BELL.TXT, SELL.BAS, PRELL.TXT, and SELF.TXT were listed in a diskette directory, a wild-card file name of ?ELL.TXT would match YELL.TXT and BELL.TXT.

The second wild-card character is the asterisk or star (*). This character will match a group of zero or more characters. As the following example table shows, this wild-card characters can be used alone or combined with the question mark in order to gain a lot of flexibility:

Directory	----- Wild-Card File Names -----			
	ELL.TXT	SEL.*	?ELL.*	*.*
YELL.TXT	Matches		Matches	Matches
BELL.TXT	Matches		Matches	Matches
SELL.BAS		Matches	Matches	Matches
PRELL.TXT	Matches			Matches
SELF.TXT		Matches		Matches
SELFISH.COM		Matches		Matches

As you can see, the wild card characters can be used in both the primary file name and the extension. It might appear that wild-card characters are used to tell DOS XL to find the first file which matches the wild-card file name you gave, but actually these characters are much more powerful. Instead of just stopping at the first file DOS XL finds which matches the wild-card file name you specified, DOS XL will continue to perform whatever command you gave it on any other files it can find

on that diskette which also match the wild-card file name. This can save you a lot of command typing if you wish to command DOS XL to perform the same command on a large collection of files.

For many of the things you can command DOS XL to do it would not make any sense to specify more than one specific file, and DOS XL won't accept a wild-card file name when you give it these types of commands. The DOS XL menu commands for which it will accept wild-card file names are as follows:

- Files on Disk
- Copy Files
- Erase Files
- Protect Files
- Unprotect Files

A full discussion of what these commands will cause DOS XL to do is provided later in this guide.

1.4 How Do You Use Your Other Non-Disk Devices?

All Atari Personal Computers consider everything which you have to attach to your computer via a cable (like your Indus GT) to be an "external device" (or "peripheral"). This includes your television set or display monitor. It also includes your computer's keyboard even though it is obviously a direct part of the computer unit. When prompted for a file name by DOS XL, sometimes you can enter the name of one of these other devices instead. These other devices are referred to by names consisting of a single letter optionally followed by a single digit used to define a specific device when more than one of the same kind exist, such as in the case of D1: and D2: for two diskette drives. The device name must be followed by a colon. The following is a list of device names which DOS XL will recognize:

C: The Program Recorder. This is a device very similar to a standard audio cassette recorder, but which Atari has heavily modified so that your Atari Computer can save and load information to/from it. You can use the recorder as either an input (load or read) or output (save or write) device, but never as both simultaneously.

D1:-D8: Diskette Drive(s). Unlike the program recorder, diskette drives can be used for input and output simultaneously. Since diskette drives can also access any peice of information recorded on a diskette directly without having to "rewind" or "fast-forward" a tape, you usually also have to specify a file name following the device code (D1:-D8:), as previously mentioned, so that DOS XL can tell the diskette drive which peice of information to input or output.

NOTE: If you use D: without a drive number, D1: is assumed.

E: Screen Editor. The screen editor simulates a very limited text editor/word processor using the keyboard as input and the display (television or monitor) as output. This is the editor you use when typing in a BASIC program. In many cases, DOS XL, BASIC, and many other program will assume that you want to use this device (E:) unless you specify some other device.

K: Keyboard. This device code allows you to specify just the keyboard half of the full screen editor device. This device can be used for input only.

P: Printer. This device code allows you to send text to your printer if you have one. On old Atari computer configurations, output to the P: device was sent to a printer via Atari's 850 Interface Module. Atari's newer printers can be connected directly to your Atari computer without the added expense of this interface module.

R1:-R4: RS-232 Serial Ports. In addition to connecting a printer to an Atari computer, Atari's 850 Interface Module also permits your Atari computer to perform RS-232 communications. RS-232 is an extremely industry standard type of

communications which permits just about any computer to talk to just about any other computer as well as an extremely large number of non-Atari peripherals like video terminals, non-Atari printers, plotters, and modems. These four RS-232 devices can be used for both input and output.

NOTE: If you use R: without a device number, R1: is assumed.

S: Screen Display (either television or monitor). These device codes allow you to specify just the screen display half of the screen editor device. Both input and output can be performed to/from this device, thus permitting program to both change the screen display and read what the screen is currently displaying.

1.5 How Does DOS XL Accept Commands?

A primary feature of DOS XL is the two different ways by which you can command it. You may choose either a menu mode or a Command Processor. For those of you unfamiliar with other menu driven programs such as Atari's own DOS, a menu is simply a list of commands which appear on the screen. You need simply choose one of the options listed before you. If additional information is required, you are further prompted by the program (DOS XL in this case) for you to type the necessary information. In this way, you need not remember all the special command words which DOS XL will understand; instead, you may simply select a command from the list.

The other way of commanding DOS XL is under DOS XL's Command Processor mode. In this mode, you are not shown a list of commands to choose from. Instead, you must remember (or look up in a manual) all the command words necessary in order to get DOS XL to do your bidding. Although this might at first be cumbersome, once several commands have been committed to memory, the command mode is much faster and easier to use. Also, certain advanced features of the DOS are available only from the Command Processor. Since using DOS XL from under the Command Processor

mode is obviously for advanced Atari users, a full discussion of its operation has been provided in the seperate DOS XL Reference Manual.

The copy of DOS XL you have received with your Indus GT is set up so that you will be presented with the menu mode of command entry. It is recommended that this mode be used exclusively until you have gained a lot of familiarity with DOS XL.

Section 2: GETTING STARTED WITH DOS XL

2.1 How Do You Get DOS XL Running?

"Getting DOS XL Running" is referred to as "booting" DOS XL. "Booting" refers to how every DOS must "pull itself up by its boot straps", which in turn refers to how a DOS must essentially get itself running with only a bare minimum of assistance from the computer itself. After all, every other program you'll run has some sort of DOS (you may not see it) which loads the program into the computer's memory and starts it running; but the DOS itself has no one to help it.

Anyways, here's the step by step approach to booting DOS XL:

- 1) Connect your disk drive and any other peripherals to your Atari computer following the manufacturer's instructions for each peripheral.
- 2) Turn on your peripherals and your monitor or television, but leave your Atari computer turned off. **Important reminder:** Never leave any diskette inside any diskette drive when you are turning the drive's power on or off. All drives pass through a sort of "undefined" state when they are being granted or deprived of power. Very extensive circuitry has been built into your Indus GT to prevent it from altering information on your diskettes should they be left in the drive during this "undefined" state (after all, you have no control over a power black-out), but it is always safer to remove any diskettes first.
- 3) Insert the DOS XL diskette which came with your Indus GT into your disk drive (drive 1 if you have more than one drive). For both Indus and Atari drives, the label of the diskette you want to boot should be facing up and the oval cut which exposes the diskette's surface should be inserted first.

4) For the time being, make sure there are no cartridges inserted into your Atari computer (this includes any BASIC cartridge). It will probably be very common for you to boot DOS XL with cartridges installed (especially a BASIC cartridge) at a later time, but for now you'll want to keep things very simple.

5) Turn on your Atari computer and the rest is automatic: the disk drive will be accessed, and after a time the DOS XL copyright message will appear at the top of the screen. Then, a message will begin to appear, line by line, which begins with "Welcome to DOS XL...". This message is coming from something called a "start-up file". Getting rid of this start-up file is discussed later in this guide. The last line from the start-up file is just "MENU". This is a command which instructs DOS XL to load the DOS XL menu. After a few more seconds, the menu program will finish loading, the screen will again clear, and the DOS XL menu will appear.

2.2 What About Double Density?

Once you have your DOS XL diskette booted, you will probably start asking yourself about the Indus GT's double density capability. But before starting to use double density, you will need to understand some differences between using single density versus double density. In truth, you will probably find occasion to use both densities. There are many various reasons for using one density versus the other, here are just a few:

Single Density: To be compatible with diskettes created or designed for Atari 810 or 1050 disk drives, you will need to use single density. Single density diskettes used with DOS XL are completely file compatible with Atari DOS 2.0S. All operations which work with Atari DOS will generally work with DOS XL when used under single density.

Are there exceptions? Yes. Several companies produce self-booting disks (that is, you simply put them in the disk drive and turn on the computer, you don't need DOS XL) which make use of certain strange features available only in Atari's own DOS. There is nothing we can do to make DOS XL compatible with these disks! On the other hand, this is not really a problem, since (as we mentioned) these disks are generally self-booting (implying that they include a copy of Atari DOS on their disk). To use these diskettes, do nothing special. Simply follow their manufacturers' directions.

Double Density: Generally, most programs written with cartridge-based languages will work fine with double density DOS XL. This usually includes programs written in Atari BASIC, PILOT, LOGO, Optimized Systems Software BASIC XL, MAC/65, C/65, and more. Of course, if you yourself have written the program and have not made assumptions about the size and type of disk, your programs will run correctly also.

What doesn't work in double density? Programs which assume that sectors always contain 128 (or 125) characters. Programs which are self-booting and which have special "protection" schemes which prevent you from copying them. Programs which try to perform some or all of the diskette drive input or output themselves without asking for the DOS's assistance. As mentioned above, though, these programs are usually distributed on self-booting disks, so you need do nothing special with them.

How do you use double density? The first thing you will need to do is create what is called a "double density system master diskette". This diskette is identical to the single density one we sent you, except it will be double density and have more storage capability. Before you can create this double density diskette, you will need to become more familiar with how to command DOS XL. Therefore, creating the double density system master is explained later in this guide.

SPECIAL NOTE: Under DOS XL, a double density diskette will contain exactly the same number of sectors (units of storage) as a single density diskette. This confuses

many beginning users. The difference between double density and single density under DOS XL is the size of the sectors. Double density sectors are twice as large as single density sectors, and therefore programs and other data saved on double density diskettes require fewer sectors of storage than they require on single density diskettes.

2.3 How Do You Use The DOS XL Menu?

When you boot the DOS XL diskette which came with your Indus GT, it will automatically place you (after it does a lot of other stuff) into the DOS XL menu. This menu looks something like this:

```
DOS XL MENU   version 2.20
  copyright (c) 1983  OSS, Inc.
```

```
Files on Disk   Protect Files
To Cartridge   Unprotect Files
Copy Files      Rename File
Duplicate Disk  Save Binary
Erase Files     Load Binary
Initialize Disk Go to Address
Extended Command Quit to DOS XL
```

Enter your selection.

Although the above sample does not show it, the first characters of each of the 12 commands in the list are in inverse video. These characters are those which you would type to select a command. For example, to command DOS XL to "Rename File", you would simply type "R", in response to the "Enter your selection" prompt. For most of the menu commands, extra input is required. The menu will prompt you with appropriate messages whenever you are required to input more information, such as a file name.

Whenever you are prompted by the DOS XL menu to enter a filename or a filespec, you don't always have to specify the device name for the drive (D1:-D8:). If you do not specify a device name, drive 1 is assumed (D1:). For example, if you typed "GEORGE" as a filename, the menu would assume that you meant "D1:GEORGE".

PROBLEM PREVENTOR: In general, you may not omit the drive specifier on names entered while using cartridge based products such as Atari BASIC or Optimized Systems Software BASIC XL. Except when working with the menu or DOS XL's Console Processor, you usually need to specify the entire file name (and often must enclose it in quotes, as in Atari BASIC).

2.4 Is Your DOS XL Diskette Okay?

In order to ensure that your DOS XL master diskette (the one which came with your Indus GT) is in good condition, you should view the names of the files contained on it. The DOS XL menu of commands should be visible on the screen, and the menu will prompt you with:

Enter your selection.

The first command in the menu is "Files on disk". This command allows you to view the names of the files on a diskette. First ensure that your DOS XL master

diskette is still in drive 1. Then command DOS XL to list the names of the files on your diskette by pressing the "F" key on your keyboard.

The DOS XL menu program will respond to this command with:

Files on disk

Filespec:

In order to look at all files on the disk, simply press the [RETURN] key. (Note: [RETURN] is used through-out this guide to indicate the key labelled "RETURN" and not the individual letters "R", "E", "T", "U", "R", and "N".)

The list of files on your master disk will appear and should look something like:

```
* DOS      SYS 046
* DOSXL    SYS 046
* MENU     COM 025
* CLRDSK   COM 023
* COPY     COM 075
* DO       COM 003
* DUPDBL   COM 011
* DUPDSK   COM 011
* INIT     COM 006
* INITDBL  COM 023
* RS232    COM 001
* SDCOPY   COM 086
* SYSEQU   ASM 022
* MEM      LIS 066
* RS232FIXCOM 002
  STARTUP  EXC 003
222 FREE SECTORS
Hit RETURN for menu
```

Each of the files has a primary name and an extension. For example, the file COPY.COM has the primary name COPY and the extension COM. Note that in the file listing the period is not shown. Instead, there may be one or more spaces between the primary name and the extension. This format appears only in the file listing. You may never use this form for specifying files. If you are using file extensions, you must use a period with no intervening spaces, as in "D:TEST.LIS". File names are explained earlier in this guide.

Notice that all of the files on the master disk except the file "STARTUP.EXC" are preceded by an asterisk in the directory listing. An asterisk preceding a file implies that it has been protected from modification or erasure through the use of the DOS XL menu command "Protect Files". This method can also be used to protect your own files from change or deletion through accidental use of one of the DOS XL commands.

2.6 How Do You Keep Your DOS XL Diskette Safe?

Once you have successfully booted your master disk, you will now need to make a second (or "backup") copy. This permits you to put your DOS XL master diskette away in a safe place and only use the second copy you've made. That way if, for some unexplained reason, your second DOS XL diskette gets magnetically altered and will no longer boot, you can recreate it from your safely stored-away master diskette.

First, for safety's sake, place a write protect tab over the write-enable notch on your DOS XL master disk, if it does not already have one. This will prevent any mistakes you may (or may not) make while using DOS XL from damaging your DOS XL master diskette. Note: Some copies of DOS XL may be distributed on diskettes which don't even have write-enable notches which need to be covered. In these cases, you won't have any notch to cover. Location and usage of the write-enable/protect notch is provided in your Indus GT Drive Manual.

The DOS XL booting process should leave you with the DOS XL menu of commands displayed on your screen. The following prompt will appear with the cursor below the menu:

Enter your selection.

What you do at this point depends upon whether you have one or two (or more) drives. If you have two or more drives, and your second drive is an Indus GT, then you'll need to read the section later in this guide which discusses configuring your Indus GT. The reason for reading this later configuration discussion at this point is because you will need to make sure your second drive is configured for single density. Once you've read that section, you can resume at this point. If you only have one drive then you won't need to be concerned about the configuration discussion. If you have a second drive which is not an Indus GT, an Atari 810, or an Atari 1050, then you should consult that drive's manual to see if the drive is "configurable". If it is, you will need to read the later discussion at this point. If it isn't, then you can just continue on here.

In response to the "Enter your selection" prompt, you'll want to type "D" for "Duplicate Disk". This will cause the DOS XL menu program to ask you:

Double density?

As mentioned before, the DOS XL system master which came with your Indus GT is single density; so you'll want to answer this question with "N[RETURN]" for "No". Later on when you are making other backups you would answer "Y" for "Yes" if the diskette you are copying is in double density.

Either the DUPDSK.COM (short for DUPLICATE DISK) or DUPDBL.COM (short for DUPLICATE DOUBLE density disk) utility program will be read into memory, depending on whether you answered "N" or "Y" to the last prompt. The next prompt is:

Source disk (1,2,3,4) :

Normally, you will copy from drive 1 so type "1". The DOS XL menu will the prompt you with:

Destination disk (1,2,3,4) :

Your answer to this prompt is depedent upon whether you have one or more drives. If you only have one drive, then the answer is quite obviously "1". If you have two or more drives, then answer with "2" in order to speed up the copying process. Once you've entered your answer, you will then be asked:

Format destination disk (Y/N)?

Most blank diskettes are unformatted. That is, they are not yet prepared to hold any information. In order to copy files or diskettes to blank diskettes, they must first be formatted. Therefore, answer this question with "Y[RETURN]" for "Yes". If you know that your destination diskette is already formatted, answer "Y[RETURN]" anyways just to be consistent. At this point, the DUPDSK or DUPDBL utility will instruct you to either:

Insert source disk into drive 1
And hit RETURN when ready

or:

Insert source disk into drive 1
Insert destination disk into drive 2
And hit RETURN when ready

depending upon whether you are using one or two drives for the copy.

Your master disk should still be in drive 1 at this point, which is the source diskette and drive. If you are using drive 2 for the copy, insert your blank diskette (or a diskette to be completely recopied thus losing any old information the diskette may have contained) into drive 2. Once you have the correct disk(s) in the correct drive(s), press "[RETURN]".

The light on the front of your source disk drive will come on, and the diskette duplication utility will respond by saying:

Reading source disk

If you are only using one drive for the copy, around when the busy light on your drive goes out you will be prompted with:

Insert destination disk into drive 1
And hit RETURN when ready

The diskette duplication utility has read as much as possible of the source disk into your computer. At this time, remove your DOS XL master disk from drive 1 and insert a blank diskette or one which you no longer need the old information on it any longer. When the diskette is in, press "[RETURN]".

The program will respond:

Formatting destination disk

and, after a while,

Writing destination disk

Most of the time, the total information on a diskette is too large to hold in your Atari's memory at one time. This is the case for your DOS XL disk. Therefore, if you are only using a single drive to make the copy, you will be prompted to

repeatedly insert your source and destination disks (the DOS XL master and the blank diskette, respectively) until the duplication is complete. Follow these prompts carefully until the diskette duplication utility responds:

Copy same disk again (Y/N)?

This means you, with DOS XL's help, have successfully created a backup copy of your DOS XL master diskette. Remove this backup DOS XL from the drive and place a write-protect tab over the diskette write-enable notch. You should also make a label for the diskette which indicates that it is your single density DOS XL System Diskette ("System Master Diskette" refers to the diskette you received with your drive.)

To get back to the main DOS XL menu, type "N[RETURN]" in response to the above question. The disk duplication utility program will respond with:

Hit RETURN for menu

After you press "[RETURN]", DOS XL will return you to the main command menu.

2.5 How Do You Use Cartridge BASIC or Other Cartridges?

How various cartridges work with DOS XL depends upon which particular cartridge is in use. All cartridges will work with DOS XL exactly the way they work with standard Atari DOS 2.0S. Certain cartridges, especially game cartridges, are designed not to work at all with any DOS. These types of cartridges are written in such a way that your Atari computer starts them running the minute the computer is turned on, before the computer attempts to start booting the DOS. Because DOS is never booted, the cartridges don't require DOS and therefore there is no "using" DOS XL with these cartridges.

The other main type of cartridge is one which wants to use DOS for saving and loading programs, text, or other information. Most of these types of cartridges are

programming language cartridges such as Atari's BASIC or Optimized Systems Software's BASIC XL and ACTION!. These cartridges will permit your DOS XL to be booted into the computer, and then the DOS XL will in turn automatically start the cartridge running (this is called "transferring control (of the computer) to the cartridge"). This means that if you boot DOS XL without Atari's BASIC cartridge in your computer, you end up with either the DOS XL menu or at DOS XL command level. But, if you boot DOS XL with the BASIC cartridge installed, you end up with BASIC's "READY" prompt.

There is a certain case in which DOS XL will not automatically transfer control to one of these cartridges. This is when the booted DOS XL diskette contains a file called "STARTUP.EXC". This is a special automatic command file from which DOS XL will take its commands when DOS XL is finished booting. The STARTUP.EXC file is an advanced feature of DOS XL which is discussed later in this guide.

The DOS XL diskette which came with your Indus GT contains a STARTUP.EXC file which produces a series of single line messages prior to giving you the command menu. If the STARTUP.EXC file is "Erased" (the "erase" menu option is discussed later) from a copy of your DOS XL diskette (never alter your original DOS XL diskette) then those "hello" messages will no longer print and you will be placed directly in the command menu.

Since a STARTUP.EXC file can contain a command which tells DOS XL to transfer control to a cartridge, DOS XL will follow the commands in STARTUP.EXC rather than automatically giving the cartridge control. Since the STARTUP.EXC file on the diskette which came with your Indus GT never tells DOS XL to start the cartridge running, that copy of DOS XL will never automatically leave you in BASIC or any other cartridge. If you erase the STARTUP.EXC file, then DOS XL will automatically give control to any cartridge present (if the cartridge wishes control).

You can always tell DOS XL to transfer control to a cartridge by specifying the "To Cartridge" command on the DOS XL command menu. This command is discussed later.

Section 3: THE DOS XL MENU

The DOS XL menu was designed to be easy to use while allowing you access to the full power of both your Indus GT diskette drive and your Atari computer.

For those of you who have previously used Atari DOS, here is a summary of the differences between the DOS XL menu and the Atari DOS menu:

- 1) Loading the DOS menu - The Atari DOS menu must be loaded in from the disk whenever you return to DOS from a cartridge. Since we felt that this process was too slow and cumbersome, we made sure that the DOS XL menu may be kept "resident" (in memory) at all times. This does occupy about 2,000 characters more memory, but this is more than offset by the extra ease-of-use. Once you become comfortable with DOS XL, you can then begin to learn how to issue commands directly to DOS XL without using the menu program; thereby freeing up these 2,000 characters of storage for other uses.
- 2) Atari DOS supports the use of a special file in which to save user memory while accessing DOS functions (the MEM.SAV file). DOS XL neither supports nor needs this file.
- 3) The DOS XL menu only requires you to press a single key to access commands, whereas Atari DOS insists that you keep pressing the "[RETURN]" key after each menu selection.

3.1 What is the DOS XL Menu?

Whenever the menu is entered, the following list of commands will appear on the screen:

DOS XL MENU version 2.20
copyright (c) 1983 OSS, Inc.

Files on Disk	Protect Files
To Cartridge	Unprotect Files
Copy Files	Rename File
Duplicate Disk	Save Binary
Erase Files	Load Binary
Initialize Disk	Go to Address
Extended Command	Quit to DOS XL

When the DOS XL menu is visible on the screen, you are prompted with:

Enter your selection.

At that point, you should type the first letter of any of the DOS XL menu commands listed on the screen. If more input is required to complete the command, the menu will prompt you for more information. Unless the command loads a utility program, you may cancel a command at any time by hitting the [ESCAPE] key on the upper left of your keyboard. If the command loads a utility program (the only commands which do this are "Copy Files", "Duplicate Disk", and "Initialize Disk"), you may have to press the [RESET] key in order to cancel the command.

The following sections describe each menu command in detail. The commands are presented in alphabetical order, not the order in which they appear in the menu.

3.2 How Do You "Copy Files"?

The "Copy Files" command menu item allows you to transfer files between diskettes or to different files on the same diskette. This command is most useful for copying one or a few files from one diskette to another. If you desire to transfer all or most of the files on a single diskette to another diskette, you should use the "Duplicate Disk" command menu item instead, as it will perform the operation much more rapidly.

To use the copy command, select "C" when the menu prompts you for a command selection. At that time, DOS XL will check for the COPY.COM file on the diskette in drive 1. This is the utility program which performs file transfers. If DOS XL does not find the COPY.COM program, you will be prompted to insert your DOS XL master disk as follows:

Copy Files

Insert MASTER disk and hit RETURN

If you receive this prompt, take out any disk in drive 1 and insert any DOS XL system disk which is in the same density as the diskette which was in drive 1 and press the [RETURN] key.

The menu will then prompt:

Copy Files

From file:

At this point, you should respond with a filespec specifying the file or files to be copied (e.g., D:GEORGE, D2:JUNK.LIS, etc.). For example, if you want to transfer the contents of the file "PROG1" on drive 1 to another diskette, you should type "D1:PROG1".

Notice that wild-cards may be used to refer to files using the COPY utility (e.g., TEMP.*, AB???.COM, etc.). As a special case, if you wish to copy all files on a disk to another disk, just use a filespec of Dn:, where n is the source drive number (e.g., D1:). How to use wild-cards is discussed earlier in this guide.

The COPY utility will then prompt:

To file:

You should respond with the destination filespec. In most cases you will want to transfer files from one diskette to another without changing their names. In this case you may refer to the destination filespec as just Dn:, where n is the destination drive number (e.g., D:, D1:, D2:). In the above example, if you wanted to copy "PROG1" to a different diskette and you own only 1 drive, you should type "D1:".

You will then be asked:

Single Drive?

If you own only a single drive as in the above example, or if you are performing this copy to another diskette in the same drive,

You type: Y[RETURN]

In any other case,

You type: N[RETURN]

The COPY.COM utility program will then be loaded from the diskette, and you will be prompted:

Insert disk(s) to be copied
and hit RETURN when ready

Make sure the diskette containing the file you are copying is in the drive you told the copy utility it would be in. If you are using more than one drive to make the copy, insert your destination disk into the proper drive also.

You type: [RETURN]

Before each file is copied, you will be asked:

Copy
Dn:filename
to Dn:filename?

If you wish to copy that particular file,

You type: Y[RETURN]

Otherwise,

You type: N[RETURN]

If you choose not to copy a file, a message will be printed to the screen verifying that the file was not copied..

Whenever you do choose to copy a file, the source file will be read into memory. If you are copying to another disk on the same drive, you will then be prompted to insert the destination disk as follows:

Insert 'to' disk and hit RETURN

If the destination file already exists, you will be asked:

'To' file already exists
OK to overwrite?

If you wish to replace the old file with the source file,

You type: Y[RETURN]

Otherwise,

You type: N[RETURN]

If the destination file has previously been guarded against modification by using the DOS XL menu "Protect Files" command (i.e., the file is preceded by an asterisk in the "Files on Disk" listing of the disk), the COPY utility program will not be able to overwrite that file. The protection must first be removed using the "Unprotect Files" menu item before that file may be written to.

The COPY utility reads as much as possible of the source file into memory at one time. If the source file is too large to fit into memory and you are copying on a single drive, you will again be prompted:

Insert 'from' disk and hit RETURN

Re-insert your source disk and continue to carefully follow the directions of the prompts until the entire file is copied.

When a file has been completely copied, a verification message will be printed on the screen. When all files have been copied, you will be prompted:

Hit RETURN for menu

To return to the list of menu commands,

You type: [RETURN]

PROBLEM PREVENTOR: The "Copy Files" command should not be used to copy from single to double density diskettes if you own only 1 disk drive. Copying between two different densities using only one drive is discussed as a special case later in this guide.

3.3 How Do You "Duplicate (a) Disk"?

The "Duplicate Disk" menu item allows you to quickly copy the entire contents of a diskette to another diskette. If you wish to copy only one or just a few files from one diskette to another, or if you need to preserve some of the files already on the disk you wish to copy TO, the "Copy Files" menu item should be used instead.

PROBLEM PREVENTOR: The "Duplicate Disk" menu item writes entirely new information to the destination diskette, thus completely erasing all files which previously existed there. Carefully select the desired destination diskette to avoid accidentally destroying your program disks.

To select the "Duplicate Disk" menu item, type "D" when you are prompted to enter a command selection.

You will then be asked:

Duplicate Disk
Double density?

If your source disk was formatted under single density,

You type: N[RETURN]

If the source disk is double density,

You type: Y[RETURN]

After you answer this question, DOS XL will check for the DUPDSK.COM (for single density) or DUPDBL.COM (for double density) file on the diskette in drive 1. This is the utility program which performs full diskette duplication. If DOS XL does not find the utility program it needs, you will be prompted to insert your DOS XL master disk as follows:

Duplicate Disk
Insert MASTER disk and hit RETURN

If you receive this prompt, take out any disk in drive 1 and insert any DOS XL system disk which is in the same density as the diskette which was in drive 1 and press the [RETURN] key.

Once loaded, the diskette duplication utility will prompt you with:

Source disk (1,2,3,4) :

Normally, you will copy from drive 1 so,

You type: 1[RETURN]

Next you will be prompted with:

Destination disk (1,2,3,4) :

If you have only a single drive, or you wish to use drive 1 as your destination drive,

You type: 1[RETURN]

If you wish to use a drive other than 1 for a destination drive,

You type: n[RETURN]

where "n" is the number of the desired destination drive.

Once you've specified the destination drive, you will be asked:

Format destination disk (Y/N)?

Most blank diskettes are unformatted. That is, they are not yet prepared to hold disk files. In order to copy files or diskettes to blank diskettes, they must first be formatted. Therefore,

You type: Y[RETURN]

At this point, the disk duplication utility will instruct you to either:

Insert source disk into drive 1
And hit RETURN when ready

or:

Insert source disk into drive 1
Insert destination disk into drive n
And hit RETURN when ready

In either case, follow the directions given by the utility. Once you have the diskette(s) inserted,

You type: [RETURN]

At this point, the light on the front of your disk drive will come on, and the disk duplication utility will respond by saying:

Reading source disk

If the destination drive is the same as the source drive, you will be prompted:

Insert destination disk into drive n
And hit RETURN when ready

At this time, remove your source diskette from drive 1 and insert a blank diskette. When this has been done,

You type: [RETURN]

The program will respond:

Formatting destination disk

and, after a while,

Writing destination disk

Most of the time, the total information on a diskette is too large to hold in your Atari's memory at one time. This is the case for your DOS XL disk. Therefore, you will be prompted to repeatedly insert your source and destination disks until the duplication is complete. Follow these prompts carefully until the disk duplication utility responds:

Copy same disk again (Y/N)?

You type: N[RETURN]

At this point, you will be prompted:

Hit RETURN for menu

To return to the DOS XL menu,

You type: [RETURN]

3.4 How Do You "Erase Files"?

The "Erase Files" menu item allows you to delete one or more files from a diskette. This menu item should be used with care since only very advanced users can recover an erased file (if at all).

If you use the "Erase Files" menu item to attempt to erase a file which has previously been protected (i.e., the file name is preceded by an asterisk in the directory listing), you will be given the error message "FILE PROTECTED". If you desire to erase this file, you must first remove the protection by using the "Unprotect Files" command. Note that protecting files is an excellent way of guarding against accidental erasure.

To use this command, select "E" when the menu prompts you for a command selection. The menu will then prompt:

Erase Files

Filespec to erase:

You should respond with the name of the file you wish to erase. If you wish to erase a group of files, you may use wild-card characters in the filespec. However, be very sure you know what you are erasing. Wild-card characters are discussed earlier in this guide.

You will then be asked:

Are you sure?

If you feel the filespec you entered was correct,

You type: Y[RETURN]

If you wish to abort the "Erase Files" command,

You type: N[RETURN]

If you answered "Y", all files which match the selected filespec will be removed from the diskette. The menu will then prompt:

Hit RETURN for menu

To return to the menu of commands,

You type: [RETURN]

3.5 How Do You List The "Files On (a) Disk"?

The "Files on Disk" menu item allows you to view the names of any or all files on a diskette.

To use this command simply select "F" when prompted by the menu for a command selection. Then insert the desired diskette into one of your disk drives (or drive 1 if you have only one drive). At that point, the menu will prompt:

Files on disk

Filespec:

The requested filespec instructs DOS XL which files on the disk to look for and display. The following table gives some examples of filespecs and the corresponding lists of files they display:

<u>Filespec</u>	<u>Files listed</u>
GEORGE	The file having the name GEORGE, if such a file exists.
JUNK.SAV	The file having the primary name JUNK and the extender SAV, if such a file exists.

AB? Any file not having an extender whose name is three characters long where the first two are AB. This filespec matches ABC, ABX, AB1, etc.

CAT* Any file whose name begins with CAT. The filespec matches CAT, CATCHER, CATTLE, etc.

JOHN.??X Any file whose primary name is JOHN and whose extender is three characters long ending in X. This matches JOHN.ABX, JOHN.XXX, etc.

. All files on the diskette. This filespec may be abbreviated by just [RETURN].

D1: All files on the diskette in drive 1.

D2: All files on the diskette in drive 2.

After entering the filespec, press [RETURN]. DOS XL will then give you a listing of all the files on the diskette which match your filespec. If an asterisk (*) prints in front of the file name on the listing, then the file is protected from being erased or altered. The number following the file name is the number of sectors on the diskette which the file occupies. A sector can contain about 125 characters in single density, and about 253 in double density.

Following this listing, you will get:

Hit RETURN for menu

So, just type [RETURN] to return to the menu.

3.6 How Do You "Go to (an) Address"?

The menu item "Go to Address" is normally only used by very advanced Atari users. It allows you to command DOS XL to pass control of your computer to a machine language program already residing in your Atari computer's memory. This program should have previously been loaded into memory using the DOS XL menu "Load File" command, or an equivalent method.

To use the "Go to Address" command, type 'G' when the menu prompt "Enter your selection." appears. At that time, the menu will prompt:

Go to Address

Address:

You should respond with the hexadecimal address of the location in memory to which DOS XL is to transfer control (to which it is to jump). For example, if a machine language program resides at location \$5000 (the dollar sign indicates hexadecimal), you would respond with "5000". Note that although the number is a hexadecimal value, you should not precede it with a dollar sign when you enter it.

Be sure that the address you enter is correct; for, in general, if you pass control to a location in memory which does not contain the desired machine language program, control of your computer will be lost and the keyboard will "hang" (not respond to you). In some cases, hitting the [RESET] key on your computer's keyboard will return control to you. Most of the time, however, you will be forced to turn off the power to your computer and repeat the boot process.

Once you press [RETURN] following the address, control will be passed to the machine language routine located at the desired address. If that routine returns to the menu with a 6502 RTS instruction, you will be instructed to:

Hit RETURN for menu

To return to the menu of commands,

You type: [RETURN]

NOTE: This menu item is strictly for very advanced Atari users. If you don't understand some of the terms and procedures discussed for using it, don't worry. That probably just means you don't have any need to use it.

3.7 How Do You "Initialize (a) Disk"?

The "Initialize Disk" command allows you to format blank diskettes so that you may use them to store program and data files. If you wish to create a bootable diskette rather than just a data diskette, you will normally want to duplicate your DOS XL master disk. In this case you should use the "Duplicate Disk" command rather than the "Initialize Disk" command. If you want to duplicate any of your diskettes using the "Duplicate Disk" command, you do not need to format them first using the "Initialize Disk" command, for the "Duplicate Disk" utility will perform the format operation if you desire.

PROBLEM PREVENTOR: The "Initialize Disk" command writes entirely new information to the desired diskette, thus erasing completely all files which previously existed there. Carefully select the diskette to initialize to avoid accidentally destroying your program disks.

To use this command, select "I" when prompted for a command selection. At that point, DOS XL will check for the presence of the INIT.COM utility on the diskette in drive 1. If it is not there, you will be prompted:

Initialize Disk

Insert MASTER disk and hit RETURN

after which you should insert a DOS XL system disk which is of the same density as the diskette you remove from drive 1. Then hit the [RETURN] key.

The INIT utility program will be loaded into memory and you will be presented with the four options of the INIT program. They are:

1. Format disk only
2. Format disk and write DOS.SYS
3. Write DOS.SYS only
4. Exit to DOS XL

PROBLEM PREVENTOR: The "I" (INIT) option may normally be used only to initialize diskettes of the same density as the operating density of the drive used for the initialization.

PROBLEM PREVENTOR: Normally, you should use the "Duplicate Disk" command to copy your DOS XL master to create a spare bootable disk. However, option 2 of the "Initialize Disk" command may be used to create a bootable disk. Do not, however, use option 2 if you have booted the system with an Optimized Systems Software SuperCartridge inserted. In that configuration, DOS XL will not properly write the DOS.SYS file. In order to use option 2 of the "Initialize Disk" command, first remove the SuperCartridge and then reboot the system. After using option 2 to create a bootable disk, the DOSXL.SYS file should be copied onto that disk if it is to be used with a SuperCartridge.

PROBLEM PREVENTOR: When you use option 2 of the initialization menu, the copy of DOS XL which will be written to your newly initialized diskette will expect to find the menu program (MENU.COM) when the new diskette is booted. But, the initialization utility does not place MENU.COM on your newly initialized diskette for you. In order to boot this new diskette, you must first use the "Copy Files" command menu item to copy MENU.COM from one of your DOS XL system diskettes onto your newly initialized diskette. If you forget to do this, the new DOS XL diskette will start to boot but will "die" (stop working) before it says anything on the screen.

If you wish to create a bootable disk,

You type: 2[RETURN]

If you wish to create just a data disk,

You type: 1[RETURN]

Once you've selected your initialization option, you will be asked:

Drive (1,2,3,4):

You should respond with the desired drive number (always 1, if you have only one drive), followed by [RETURN].

After selecting the drive to use for the initialization, you will be asked:

Option n drive n - Are you sure (Y/N)?

If you are happy with your entries so far,

You type: Y[RETURN]

Otherwise,

You type: N[RETURN]

If you typed "Y", the specified command will be executed. Once the initialization is completed, the initialization utility will prompt you with:

HIT RETURN FOR NEW FUNCTION

Once you press [RETURN], you will again be presented with the four options.

If you have more disks to initialize, repeat the above steps. Otherwise,

You type: 4[RETURN]

and you will be returned to the DOS XL menu.

3.8 How Do You "Load (a) Binary" File?

The "Load Binary" menu item allows you to read a binary file from disk into the memory of your Atari computer. This command can be used to load binary object of assembly language programs, or binary data to be used by such programs. The file you wish to load should have previously been written to disk using the DOS XL menu "Save File" command, or an equivalent method.

PROBLEM PREVENTOR: Do not use this command to load Atari BASIC or BASIC XL programs into memory. Instead, just use the LOAD command from the BASIC cartridge (i.e., after you have been given the "READY" prompt).

To use the "Load Binary" command, type "L" when prompted to enter your command selection. The menu will then prompt:

Load Binary

Filename:

You should respond with the name of the previously saved file you wish to load. For example, if you wish to load into memory the file "FILE1.OBJ" on drive 1, you should type "D:FILE1.OBJ".

At this point, DOS XL will access the disk to read in the binary file. You will then be asked:

Hit RETURN for menu

To return to the DOS XL menu of commands,

You type: [RETURN]

NOTE: This menu item is intended for the very advanced Atari user. If you don't fully understand this discussion, don't worry about it. That probably just means you have no need to use this menu item.

3.9 How Do You "Protect Files"?

In many cases you will have created files on your disks which you know you will hardly ever need to modify. There is a way to guard these files so that you need not

worry about accidentally deleting or modifying their contents. The "Protect Files" command allows you to protect files from renaming, erasure, or modification. These files will then be preceded by an asterisk in a directory listing when you use the "Files on Disk" command. If in the future you desire to remove the protection afforded by this command, you should use the "Unprotect Files" command.

To use this command, select "P" when the menu prompts you for a command selection. The menu will then prompt:

Protect Files

Filespec to protect:

You should respond with the name of the file you wish to protect. If you wish to protect a group of files, you may use wild-card characters in the filespec. Wild-card characters are discussed earlier in this manual.

At this point the disk will be accessed and the files will be protected. The menu will then prompt:

Hit RETURN for menu

To return to the menu of commands,

You type: [RETURN]

3.10 How Do You "Quit to DOS XL" Command Level?

The "Quit to DOS XL" command is used to pass control from the DOS XL menu to the DOS XL Command Processor. Although almost all the functions you need from DOS may be accomplished from the DOS XL menu, certain advanced commands and features are accessible only from the Command Processor mode.

To use this command, type "Q" when prompted by the menu to enter a command selection. At that point, control will be transferred to the Command Processor mode. In place of the menu, the prompt "D!:" will appear at the upper left corner of the screen. A short discussion of Command Processor mode (or command level) is provided later in this manual.

3.11 How Do You "Rename (a) File"?

The "Rename File" command may be used to change the file name associated with a file of information. This command does not alter or delete any information contained in the file. Rather, the file will only show up with a different name in the directory listing when using the "Files on Disk" command.

PROBLEM PREVENTOR: If you attempt to rename a file which has been protected against modification (i.e., the file name is preceded by an asterisk in the directory listing), you will be given the error message "FILE PROTECTED". If you desire to rename this file, you must first remove the protection by using the DOS XL menu command, "Unprotect Files".

To use the "Rename File" menu item, select "R" when the menu prompt, "Enter your selection." appears. You will then be asked:

Rename File

Old name:

You should respond with the current name of the file whose name you wish to change. For example, if you want to change the name of the file "D:GEORGE" to "D:PROG1", you should type "D:GEORGE".

The menu will then respond,

New name:

At this point you should type the new name you wish the file to have. In the above example, you should type "PROG1" at this time. Notice that you must not use a device specifier (i.e., D:, D2:, etc.) in the new name; you should type just "PROG1", not "D:PROG1".

You will then be asked,

Are you sure?

If you are satisfied that you have entered both file names correctly,

You type: Y[RETURN]

If instead you wish to abort the rename operation,

You type: N[RETURN]

If you answered with "Y", the designated file will be renamed, and you will be prompted:

Hit RETURN for menu

To return to the list of menu commands,

You type: [RETURN]

3.12 How Do You "Save (a) Binary File"?

The "Save Binary" command allows you to write a portion of your Atari computer's memory to a disk file. This command can be used to save to disk binary object of assembly language programs, or binary data to be used by such programs.

PROBLEM PREVENTOR: Do not use this command to save Atari BASIC or BASIC XL programs from memory. Instead, just use the SAVE command from the BASIC cartridge (i.e., after you have been given the "READY" prompt).

PROBLEM PREVENTOR: If you attempt to save binary data to a file which has been protected against modification (i.e., the file name is preceded by an asterisk in the directory listing), you will be given the error message "FILE PROTECTED". If you desire to rename this file, you must first remove the protection by using the DOS XL menu command, "Unprotect Files".

To use the "Save Binary" command, type "S" when prompted to enter your command selection. the menu will then prompt:

Save Binary

Filename:

You should respond with the name you wish the saved file to have. For example, if you wish to write memory from locations \$4000 to \$4100 (the dollar signs indicate hexadecimal addresses) to the file "FILE1.OBJ" on drive 1, you should type "D:FILE1.OBJ".

It is recommended that binary object file names have either the extension "OBJ", or "COM". In the former case, "OBJ" would indicate that the file was an assembly language OBJect file for a program or data. The second extension, "COM",

indicates that the program is a system utility program which was either included with your DOS XL master disk or written by you or another user.

Once you've specified the file name and press [RETURN], you will be prompted with:

Starting address:

You should respond with the hexadecimal value of the first address you wish to write to disk. In the above example, the starting address was \$4000 so you should type "4000". Note that although the value is hexadecimal, you should not precede the number with a dollar sign.

The menu will then prompt with:

Ending address:

You should respond with the hexadecimal value of the last address you wish to save. In the previous example, you should enter "4100".

At this point, DOS XL will access the disk to write out the binary file. You will then be instructed to:

Hit RETURN for menu

To return to the DOS XL menu of commands,

You type: [RETURN]

NOTE: This menu item is intended for use by very advanced Atari users. If you don't understand parts of the discussion of this menu item don't worry. Chances are you won't need to use this menu item anyways.

3.13 How Do You Go "To (a) Cartridge" From DOS XL?

The menu item "To Cartridge" permits you to instruct DOS XL to start running (transfer control to) an installed cartridge. (BASIC, for instance.)

To use this command, select "T" when prompted by the menu for a command selection. At that time, DOS XL will transfer control to any cartridge you have installed in your Atari. If the installed cartridge is Atari BASIC, you will then see BASIC's "READY" prompt. If you are using some other cartridge, you should see whatever prompt that cartridge produces. If no cartridge was inserted, the error message "NO CARTRIDGE" will be displayed.

If the "To Cartridge" command is used after any of the following commands are selected:

- Copy Files
- Duplicate Diskette
- Initialize Diskette
- Extended Command
- Load Binary

a coldstart will be performed by the cartridge, thus erasing any program which was in memory. Therefore, if you wish to go to the menu to execute any of these commands, remember to first write any program you are working on to disk. This is accomplished in Atari BASIC or Optimized Systems Software's BASIC XL by using the SAVE command in the BASIC cartridge.

3.14 How Do You "Unprotect Files"?

The "Unprotect Files" menu item removes the protection status placed on a file by the "Protect Files" menu item. This in turn allows these files be renamed, erased, or modified. These files will no longer then be preceded by an asterisk in a directory listing when you use the "Files on Disk" command.

To use this command, select "U" when the menu prompts you for a command selection. The menu will then prompt with:

Unprotect Files

Filespec to unprotect:

You should respond with the name of the file you wish to unprotect. If you wish to unprotect a group of files, you may use wild-card characters in the filespec. Wild-card characters are discussed earlier in this guide.

At this point the disk will be accessed and the files will be unprotected. The menu will then prompt with:

Hit RETURN for menu

To return to the menu of commands,

You type: [RETURN]

3.15 How Do You Perform An "Extended Command"?

This command may be used to pass a command line to the DOS XL Command Processor. Although almost all the functions you need from DOS may be accomplished from the DOS XL menu, certain advanced commands and features are accessible only

from the Command Processor mode. The "Xtended Command" function of the DOS XL menu may be used to access from the menu those commands available only from the Command Processor. The Command Processor's commands are briefly discussed later in this guide.

To use the "Xtended Command" function, select "X" when prompted by the menu "Enter your selection.". At that time, the menu will prompt with:

Xtended Command

Command:

You should respond with the DOS XL command you wish to have executed. For example, if you wish to use the "RS232" command, you should type "RS232".

PROBLEM PREVENTOR: Many of the DOS XL commands accessible by the "Xtended Command" function perform their operations by loading utility programs from a DOS XL system disk. If you wish to use a command which employs a utility program (one of the ".COM" files on a DOS XL system diskette), you should insure that a DOS XL system disk is first inserted into drive 1.

Once you press [RETURN] after entering the extended command, the desired command will be passed to the DOS XL Command Processor and executed. When the command is finished executing, the menu will prompt you with:

Hit RETURN for menu

To return to the DOS XL menu of commands,

You type: [RETURN]

PROBLEM PREVENTOR: The following commands should not be used from the menu via the "X" command:

CONFIG SDCOPY INITDBL

These commands alter the density selection(s) for the disk drives and thus alter the amount of memory used for disk buffers. To be safe, always use them only from the Command Processor Level.

Section 4: THE DOS XL COMMAND PROCESSOR

4.1 Where Does The "Quit To DOS XL" Menu Item Leave You?

The DOS XL menu program is actually just a very special utility program which has been added to the DOS XL operating system itself. DOS XL normally likes to accept the commands you give it through its "Command Processor". This is a very fancy name for a peice of DOS XL which interprets the english-like commands you type into some action which DOS XL is to perform for you.

The menu utility program is really nothing more than a helper for the beginning DOS XL user. All it does is translate the little single letter menu selection you make into the harder to remember english-like commands, and then sends these commands to the DOS XL Command Processor for the commands to be acted upon.

When you specify "Quit to DOS XL" when using the DOS XL command menu program, the menu program essentially just stops running by transferring control of your Atari directly to the DOS XL Command Processor. You can always tell when you are talking (using your Atari keyboard) to the DOS XL Command Processor, because the Command Processor will prompt you with:

D1:

This "D1:", which appears to the left of the cursor, serves two purposes. First, it is the Command Processor's prompt for you to enter a new command. Second, it indicates that drive 1 (D1:) is currently the "default" drive. The default drive is the one which DOS XL will use whenever you provide a filespec which doesn't explicitly give a disk drive device specifier. For instance, DOS XL would use the default drive when you use filespecs like GEORGE, HERNY.TXT, MYPROG.BAS. If you explicitly give a drive specification as part of your filespec (D1:GEORGE, D3:HENRY.TXT, D2:MYPROG.BAS), DOS XL will use the drive you explicitly specified.

The default drive is also the one DOS XL will go to when you enter a Command Processor command which requires DOS XL to load a special utility program from your system diskette. For instance, the COPY command requires DOS XL to load the COPY.COM program from your currently selected default drive.

You can change DOS XL's default drive by typing:

```
Dn:[RETURN]
```

where "n" is the new default drive number.

PROBLEM PREVENTOR: If you are a beginning DOS XL user, never attempt to change the default drive unless you are just playing around with your computer. Changing the default drive can also change the ways various different utility programs (including the DOS XL command menu program) operate. This is why there is no option under the DOS XL command menu to permit changing the default drive.

When using the DOS XL Command Processor directly, you are expected to type in a complete command line rather than simply a command selection. For example, to load the DUPDSK.COM utility (for duplicating single density diskettes), the DOS XL command line is "DUPDSK[RETURN]", rather than a single character as in the menu mode. It is also possible for very advanced users to write their own commands to be used from the DOS XL Command Processor or the "Xtended Command" menu function.

In order to return to the DOS XL menu from the Command Processor, insert your DOS XL master disk into your disk drive. Then, from the D1: prompt,

```
You type: MENU[RETURN]
```

This will cause the DOS XL Command Processor to load and start running the DOS XL command menu program. The DOS XL Reference Manual contains a full discussion of how to use the Command Processor.

Section 5: THE DOS XL BOOT PROCESS

5.1 What Happens When DOS XL Is Booted?

The process of loading the DOS XL operating system into your Atari's memory is somewhat different than the process for loading other DOS's. Also, deleting or adding certain files to a bootable disk can affect what DOS XL will do while booting. In order for you to modify this process and thereby customize your system, this section describes the steps which are followed in the boot process.

5.2 What Do The DOS.SYS and DOSXL.SYS Files Do?

While most other DOS's reside only in the DOS.SYS file on a bootable disk, DOS XL actually occupies two separate files. The first file, DOS.SYS must be on any disk to make it bootable. At the beginning of the boot process, this file is loaded into memory. At that time, this DOS (it is actually a complete DOS in itself) checks to see if an Optimized Systems Software SuperCartridge is inserted. If not, the DOS begins to scan for the AUTORUN.SYS file (discussed later). If a SuperCartridge is inserted, the DOS tries to load the DOSXL.SYS file off of the disk. If this file is found it loads over the top of part of the DOS already in memory and also into a portion of the SuperCartridge. This newly loaded code will then become the DOS of the machine. This DOS saves the user 5K of memory by occupying memory which is bank-switched with the SuperCartridge by taking advantage of special hardware within the cartridge. If you desire not to load this special DOS file, DOSXL.SYS, simply rename the file to a name other than DOSXL.SYS (perhaps SAVXL.SYS).

NOTE: The SuperCartridge is a product of Optimized Systems Software and is available from your local Atari dealer. For more information concerning the SuperCartridge, you should contact your dealer.

5.3 What Does The AUTORUN.SYS File Do?

Once the DOSXL.SYS file is either loaded or skipped, DOS XL searches the disk for a file called AUTORUN.SYS (note that there is no such file on the DOS XL master diskette which came with your Indus GT). If this file is found, it is loaded into memory just as if you had issued a "Load Binary" menu command.

The most common use Atari users find for the AUTORUN.SYS file is to load the RS-232 communications driver for their Atari 850 Interface Module into memory. Under DOS XL, this can be easily accomplished by simply renaming the file "RS232.COM" to "AJTORUN.SYS" on a copy of your DOS XL system diskette (never alter the original DOS XL System Master which came with your Indus GT). The RS232.COM file is discussed later in this guide.

5.4 What Does The STARTUP.EXC File Do?

If the file AUTORUN.SYS is not found, or if the program it contains returns to DOS in a special manner when it is completed (6502 RTS instruction), DOS XL will continue the boot process by searching for the file STARTUP.EXC. This file is a text file which contains commands for the DOS XL Command Processor to automatically perform. On your DOS XL System Master Diskette provided with your Indus GT there is a STARTUP.EXC file which contains REMark commands for just printing messages to the screen, and the command MENU, which causes the Command Processor to automatically load and start the DOS XL menu. (A different method of automatically loading the command menu is discussed later.)

PROBLEM PREVENTOR: Certain cartridge-based products, including Atari Writer from Atari, Inc., will not work properly if your boot disk contains a STARTUP.EXC file. If you are using a product such as Atari Writer, make a special boot disk as follows:

- 1) Duplicate your master disk onto a blank one.
- 2) Erase the file STARTUP.EXC on that disk.

You should now use this disk for booting DOS XL before running Atari Writer or other cartridge based products which won't function correctly when using a DOS XL diskette which contains a STARTUP.EXC file.

5.5 What Does The MENU.COM File Do?

If the STARTUP.EXC file is not found, the final step of the boot process is the loading of the DOS XL menu. The DOS will search the disk for the file MENU.COM. If that file is found, it will be loaded into memory and will be given control of your Atari. If the file MENU.COM is not found, the DOS XL Command Processor will remain in control. Regardless of whether control is passed to the menu program or left with the Command Processor, if there is a cartridge inserted, final control will be given to that cartridge. A full discussion of the command menu program is provided earlier in this guide.

Section 6: DOS XL AND THE 850 INTERFACE MODULE

6.1 What Is The 850 Interface Module?

The 850 Interface Module is a special communications interface produced by Atari. It gives your Atari computer the ability to communicate with other computer devices and peripherals which use standard parallel (usually printers) and RS-232 serial (many printers, plotters, modems, etc.) communications techniques. In order to use the RS-232 serial type of communications provided by Atari's 850 Interface Module, you must first load a special piece of software (called a "driver") into your Atari computer's memory. Atari DOS 2.0S automatically loads this RS-232 device driver into your Atari computer's memory whenever you boot DOS 2.0S. Under DOS XL, you can also cause the RS-232 driver to be automatically loaded when the DOS is booted, but you also have other options.

If you don't happen to own an Atari 850 Interface Module, then you can save yourself some reading by skipping this section; you probably won't find it very useful.

6.2 How Do You Load The RS-232 Driver Under DOS XL?

When using Atari DOS 2.0S, the only way to load the RS-232 device driver (Rn:) contained in the 850 Interface Module is through the use of an AUTORUN.SYS file. This option is also available to you as a DOS XL user, as discussed earlier as part of the AUTORUN.SYS file. Another option is, however, available to you. After booting DOS XL, you can simply issue the following commands:

- 1) From the DOS XL menu:
 You type: X
 and then, when prompted for a command,
 You type: RS232[RETURN]
- 2) Or, from the DOS XL Command Processor:
 You type: RS232[RETURN]

Either sequence of commands will cause the RS-232 device driver which is actually contained within the 850 itself to be loaded into your Atari computer. You can then use the four RS-232 serial ports on your Atari 850 Interface Module exactly as described in the Atari manual which came with your 850.

6.3 What About Errors In The 850's RS-232 Driver?

PROBLEM PREVENTOR: Unfortunately, the device driver which loads in from the 850 Interface Module is not perfect. The most serious flaw occurs when you push the [RESET] key after the RS-232 driver has been loaded into memory. Under certain circumstances, your Atari computer will "hang", freezing the keyboard, after pressing the [RESET] key. For this reason, many Atari reference books recommend that you never press [RESET] after loading the RS-232 driver. Under DOS XL, however, there is a solution to this and other problems. On your master diskette which came with your Indus GT there is a file called "RS232FIX.COM". This file is almost identical to the "RS232.COM" file which is normally used to load the RS232 handler. The difference is that RS232FIX attempts to correct some of the known bugs in the driver when the driver is loaded.

You may ask, "Why not just include RS232FIX on the DOS XL master disk and leave off RS232?" Well, Atari has produced several versions of the 850 Interface Module. Optimized Systems Software has almost no way of knowing whether RS232FIX works correctly with all 850 versions so, rather than introducing new problems,

both the original RS232 and the modified RS232FIX are included.

To test the "RS232FIX.COM" file with your 850 module, either:

1) Using the DOS XL menu:

You type: X

When prompted for a command,

You type: RS232FIX[RETURN]

2) Or using the DOS XL command processor:

You type: RS232FIX[RETURN]

If the RS-232 driver loaded in this way seems to work properly, you may use it exclusively for loading the RS-232 driver, ignoring the original RS232 command.

Section 7: SOME ADVANCED CAPABILITIES OF DOS XL

DOS XL is capable of performing several more advanced operations than those discussed in the previous chapters. In an attempt to limit the amount of confusion generated by this guide to a minimum, the discussion of majority of the advanced features of DOS XL has been placed in the DOS XL Reference Manual, which is available seperately from Indus Systems.

Most of the advanced features are only accessible by using the DOS XL Command Processor (they are not directly contained as part of the command menu). Since a few of these advanced features may be required by beginning DOS XL users (depending upon exactly how many and which peripheral devices you own for your Atari), you may want to be or need to be familiar with these features. In particular, if you wish to transfer files from a single density diskette to a double density diskette (or vice versa) and/or if you wish to use more than two disk drives, you should read this section.

For most of the operations we will discuss in this section, you will be using the DOS XL Command Processor. As you probably recall from earlier discussions in this guide, you may leave the command menu and issue commands directly to the Command Processor by specifying the "Q" ("Quit to DOS XL") menu item. Once you've typed "Q" from the command menu, you will be greeted with the Command Processor's "D1:" prompt; as also discussed previously in this guide. (If you have not read these previous discussions, you should do so now.)

PROBLEM PREVENTOR: Always remember, when using the Command Processor's CONFIG, INIT, COPY, and SDCOPY commands, as described below, you must have a DOS XL system diskette in drive 1 when you type the command. If you do not, you will get a "FILE NOT FOUND" error message. This message will not be referring to any files you may have specified as part of your command, but rather to the fact that the utility program which the Command Processor required could not be found on the diskette.

7.1 How Do You Use Two Drives in Different Densities?

DOS XL version 2.20 is compatible with and capable of controlling any mixture of up to eight single density and/or double density (Indus GT) disk drives. If you have one or more drives only capable of single density (such as Atari's 810 or, when under DOS XL version 2.20, Atari's 1050) as well as one or more Indus GT's capable of double density operation, we would suggest that you connect your double density Indus GT drive as drive 2 while creating your first double density DOS XL system diskette, and then as drive 1 for long-term usage. (See your Indus GT Owners Manual for switch settings, etc.). The long-term setup will allow you to boot DOS XL in either single or double density mode.

Although your Indus GT drive is capable of either single or double density operation, you can generally predict which density it will be in when power to your Atari computer is turned on. If it is drive 1, it will automatically acquire the density of the DOS XL diskette you are booting. If it is other than drive 1, your Indus GT will use the following rules to determine which density it is operating under, with rule 1 being first priority:

- 1) If there is a diskette in the drive, it will automatically change (if necessary) to operate in the density of that diskette when it receives its first command from DOS XL. (The only exception to this is if the first command is to format the diskette.)
- 2) If there is no diskette in the drive, but there has been a diskette read or written (accessed) by that drive since the drive was turned on, the drive will remain in the density of the last diskette which was accessed.

- 3) If the drive has not accessed a diskette since it was turned on, it will default to using the density switch setting on the back of the drive. (See your Indus GT Owners Manual.)

PROBLEM PREVENTOR: Since rule 3 is last priority for your Indus GT in determining the density under which it will be operating, you can see that the switch on the back of the Indus GT is certainly not a "force the density" switch. The diskette currently in the drive, or the diskette which was last in the drive, has more influence over the drive's operating density than the back panel switch.

There are, of course, no switches to be set on single density only drives like the Atari 810 or, in the case of using DOS XL and even Atari DOS 2.0S, the Atari 1050 drive.

DOS XL as shipped is set up to handle one or two disk drives and up to three simultaneously open files in double density mode (i.e., Three BASIC "OPEN" statements without an intervening "CLOSE"). If you own three or more disk drives, or you require more files open at one time, you must change some of the settings contained within DOS XL. This is discussed later in this guide.

While booting, DOS XL automatically asks each drive the density under which the drive is operating. From then on, if you want to change a drive's density (by changing the diskette in the drive to one of a different density), you must use the CONFIG command from DOS XL's Command Processor. You should never use the front panel buttons to change the Indus GT's operating density since this will not notify DOS XL that a change has occurred.

CONFIG has several advanced options, which are discussed in the DOS XL Reference Manual available separately. For our purposes, however, we need to learn three of its abilities before going on. Remember, the following commands must be performed using the Command Processor and not the menu, so you will have to use "Q" to get out of the menu first.

1. If you wish to find out what density DOS XL believes each drive is, following the Command Processor prompt:

D1:

You type: CONFIG[RETURN]

The table which is printed will tell you the density under which each disk drive is operating as well as other information regarding your drives. If a drive is not capable of double density operation, it is noted as "can't configure". Up to eight drives will be reported, and the system will even tell you which drives you don't have.

2. If you wish to change a drive from single to double density, following the Command Processor prompt:

D1:

You Type: CONFIG 1D[RETURN]

or you type: CONFIG 2D[RETURN]

or any other drive number which you wish to change.

In general, you specify the drive number you want to configure and then use a "D" to indicate double density. Any configurable drive may be changed this way. When CONFIG does its thing, it will also print the complete drive table to show you the change. If you first set your Indus GT to display the drive's type information (use the "DRIVE TYPE" button on the front of your Indus GT), you will be able to see the drive change from type "A" (single density, or "Atari 810 emulation mode") to type "b" (lower case "B" for double density, or "Atari 815 emulation mode").

PROBLEM PREVENTOR: If you use CONFIG to change the density of the drive in which you have your DOS XL system diskette, then the drive will no longer be able to read that diskette. Since CONFIG is a program which DOS XL must load off the diskette in order to change the drive's density back to its original density, this will cause you a problem unless you have already created a copy of your DOS XL diskette in the correct density. Essentially this means that you should wait to try this little CONFIG trick until you read through this entire discussion.

3. If you wish to change a drive from double to single density, following the Command Processor's prompt:

D1:

You Type: CONFIG 1S[RETURN]

or you type: CONFIG 2S[RETURN]

In general, you specify the drive number you want to configure and then use an "S" to indicate Single density. Any configurable drive may be changed this way. Just like when changing to double density, CONFIG will print a new drive table.

7.2 How Do You Initialize Different Density Diskettes?

As was noted in the previous discussion concerning the "Initialize Disk" menu item, that menu item should only be used to initialize a disk which is the same density as the booted master disk (or the current operating density of whichever drive is being used for the diskette initialization). Using the Command Processor, however, there are several other possibilities. And there is one exception.

1. If you have a single drive system, you may initialize a double density diskette even if you have booted a single density master (as is the case with the DOS XL System Master which came with your Indus GT). To do so, following the Command Processor prompt:

D1:

You Type: INITDBL[RETURN]

INITDBL is a Command Processor command which, when it has loaded from the DOS XL master disk, will simply ask you which drive you wish to use (presumably 1, in this case). It will then automatically configure the drive to double density, format the diskette, write DOS.SYS to the diskette, and then reconfigure the drive back to single density.

PROBLEM PREVENTOR: Do not use INITDBL when you have booted a double density master disk. Use menu option "I" instead.

2. If you have a multiple drive system, you may use CONFIG to configure drive 2 (or 3 or any other drive) to the density you desire. Then, following the Command Processor prompt:

D1:

You Type: INIT[RETURN]

and the INIT utility will load and run, presenting choices identical to those presented by the "I" menu option. Or, following the Command Processor prompt:

D1:

You Type: MENU[RETURN]

and the DOS XL menu will be reloaded and reactivated, and you may then use menu option "I". The actual rule is that you may initialize any diskette to the density of the drive it is placed in.

7.3 How Do You Copy Between Densities With Only One Indus GT?

This section applies only to those with one drive and that drive must be an Indus GT. If you have two or more drives, see the next section.

If you would like to copy one or more files from a single density diskette to a double density diskette (or vice versa), you must first have a diskette which has been formatted (initialized) to the proper density. If you do not have such a diskette, we suggest that you read the discussion above for assistance in initializing such a diskette.

Then, after having used the "Q" option of the menu, and following the Command Processor prompt:

D1:

you type: SDCOPY D1:*. * D1:*. * -Q[RETURN]

or you type: SDCOPY D1:*. * D1:*. * -QR[RETURN]

The first form will copy files from single to double density. The second form will copy files from double to single density.

SDCOPY will load in and then allow you to place your source ("from") diskette (in case its not the system diskette already in the drive) in the drive. SDCOPY

will then read the directory of the source disk and give you a chance to say Yes or No about each file in the directory. If you answer Yes, the file will be copied to your destination ("to") disk. Since you have only a single drive, you will have to swap diskettes at least once for each file (long files may require two or three swaps). SDCOPY will tell you when it needs the diskettes to be swapped.

SUGGESTION: Remove any cartridges from your Atari if you are copying any large files. This may allow SDCOPY to copy these files in fewer swaps, since the cartridge space can then be used by SDCOPY. (This does not apply to Optimized Systems Software's SuperCartridges, which already automatically release their space to DOS XL.)

7.4 How Do You Copy Between Densities Using Two Drives?

If you own two or more drives, you may instead use the standard "Copy Files" command (option "C" of the menu) to transfer files between single and double density. First, however, you must ensure that your drives are appropriately configured.

Since you presumably have booted your double density master diskette on drive 1, we suggest that you use "CONFIG 2S" (discussed above) to place drive 2 in single density mode (unnecessary, of course, if drive 2 is an Atari 810 Disk Drive, since it is always single density).

Remember, in order to use option "C" after using CONFIG, you must follow the Command Processor prompt:

D1:

with the command: MENU[RETURN]

This will command the Command Processor to reload the DOS XL menu and reactivate it. You may then choose option "C". When asked for "from" and "to" file names, be sure and specify "D1:" and "D2:", as appropriate. (If you make a mistake, Copy will probably not find the file names you are looking for, so no harm will be done. Just reverse the drive specifiers and try again.)

PROBLEM PREVENTOR: You may not use menu option "D" (Duplicate disk) to copy from a double density to single density diskette or vice versa! Strange and disastrous things will occur if you attempt to do so. Duplicated disks are literally duplicates, including the fact that the densities must be the same.

7.5 What Do You Do If You Have More Than Two Drives?

DOS XL as it is shipping with your Indus GT is set up to handle one or two disk drives and up to three simultaneously open files in double density mode (i.e., three BASIC "OPEN" statements without an intervening "CLOSE"). If you own three or more disk drives, or you require more files open at one time, you must change some of your DOS XL's default settings. DOS XL refers to the default setting associated with the number of drives you own as DRVBYT (you don't need to understand these names).

The default setting referred to as DRVBYT controls how many drives your DOS XL is willing to talk to. DRVBYT is set to the value 3 (this doesn't mean three drives) on the DOS XL diskette which came with your Indus GT.

The following table gives the values to which DRVBYT will need to be changed in order to use more drives:

<u>Value</u>	<u>Number of Drives</u>
1	1 Only
3	1 or 2

7	1 to 3
15	1 to 4
31	1 to 5
63	1 to 6
127	1 to 7
255	1 to 8

Before you can change the DRVBYT value, you will need to create a new DOS XL system diskette (if you haven't already done so) which can be updated with the new value. Never alter the DOS XL System Master Diskette which came with your Indus GT.

In order to change the DRVBYT value, perform the following steps (this requires an Atari BASIC cartridge):

- 1) Turn you Atari computer's power off.
- 2) Insert your Atari BASIC cartridge into your computer (do not use Optimized Systems Software's BASIC XL). Boot your DOS XL master disk.
- 3) Insert the copy you made of your DOS XL System Master Diskette into drive 1.
- 4) Turn your computer on to boot DOS XL.
- 5) If your system disk stops booting at the command menu, terminate the menu program by specifying the "Quit to DOS XL" command.
- 6) Tell DOS XL to transfer control to the Atari BASIC cartridge by typing the Command Processor command "CAR[RETURN]".
- 7) After Atari BASIC gives you its "READY" prompt, type "POKE 1802,#[RETURN]"; where "#" in that typing sequence is one of the numbers from the table listed above.
- 8) Press your computer's [RESET] key.

- 9) After Atari BASIC responds with "READY", type "DOS[RETURN]". This will return control to DOS XL.
- 10) To get back to the DOS XL menu, following the "D1:" Command Processor prompt, type "MENU[RETURN]".
- 11) From the DOS XL menu, specify the "Initialize Disk" menu item.
- 12) When the INIT utility displays your four diskette initialization options, type "3[RETURN]" to specify the "WRITE DOS.SYS ONLY" option.
- 13) When the INIT utility asks you to "ENTER DRIVE (1,2,3 OR 4):", type "1[RETURN]" to specify that the modified DOS.SYS file is to be written to the diskette in drive 1.
- 14) The INIT utility will confirm your selections by displaying "FUNCTION 3; DRIVE 1" and "ARE YOU SURE (Y OR N):". If all this is correct, type "Y[RETURN]" to tell INIT to proceed. If you typed something wrong, type "N[RETURN]" and INIT will return you to the list of options.
- 15) Once you've type "Y[RETURN]", INIT will write your modified copy of DOS XL to the DOS.SYS file on drive 1. To confirm that everything went correctly, turn your Atari computer off and then on again to reboot the new modified DOS XL. Once DOS XL is rebooted, you should be able to access as many drives as you selected from the above table.

7.6 How Do You Increase The Number Of Files You Can Have Open?

Using the copy of DOS XL which came with you Indus GT, you may open at the same time up to six single density files, or up to three double density files. If this setting is not enough for your needs, you will need to change one of DOS XL's

default settings. DOS XL refers to this default setting as SABYTE (you don't need to understand this name). SABYTE is set to 6 on the copy of DOS XL which came with your Indus GT. The following table lists other possible values to which you can change SABYTE:

<u>SABYTE</u> <u>Value</u>	<u>Files Open in</u> <u>Single Density</u>	<u>Files Open in</u> <u>Double Density</u>
2	2	1
4	4	2
6	6	3
8	--	4
10	--	5
12	--	6

Changing the value of SABYTE is almost identical to changing the value of DRVBYT as discussed above. The only difference is that for step 7 you would do:

7) After Atari BASIC gives you its "READY" prompt, type "POKE 1801,#[RETURN]"; where "#" in that typing sequence is one of the numbers from the table listed above. **NOTE:** The only difference between step 7 for changing DRVBYT and step 7 for changing SABYTE is that for DRVBYT the number after "POKE" is "1802", while the number after "POKE" when changing SABYTE is "1801".

Section 8: USING DOS XL WITH THE ATARI BASIC CARTRIDGE

This section discusses how to use your Indus GT disk drive and DOS XL from your Atari BASIC cartridge. This section is not intended as any kind of tutorial on how to use Atari BASIC or how to program in BASIC. Your Atari BASIC cartridge should have come with both a tutorial book which teaches you how to program in BASIC, and also a reference manual which lists each BASIC command and how it is used. This guide only includes the following discussion to explain how the same BASIC statements discussed in Atari's own manuals can be used to access files and information stored on your Indus GT diskette drive. The following discussion assumes you are already familiar with the information which Atari provides in their BASIC manuals.

But first, let's get the hardware set up right and things put in their proper places. Right off, you should have a copy of your DOS XL System Master Diskette which came with your Indus GT. Don't use your original diskette!! Take your copied master diskette and put it in drive 1, turn you Atari computer off, put your BASIC cartridge in the left cartridge slot, and turn the power on again.

Since you should be using a successful copy of the master disk by this point, we'll assume that the system booted properly (if it didn't, try everything again with a new blank diskette before calling us).

When DOS XL finishes booting and presents you with the DOS XL menu, you should select the "To Cartridge" menu item. When you do so, you should see BASIC's familiar "READY" prompt, and all is well.

Suppose, though, that you wanted to return to the DOS XL command menu. Why would you want to do that? Well, from the DOS XL menu you can list all files on a diskette, erase large collections of files, protect/unprotect large collections of files, and so on, without losing any BASIC program that you might have already typed in.

In fact, many of the menu commands (discussed earlier in this guide) may be used without harming even a line of what you may have typed in while in BASIC. To get back to your program just select "To Cartridge". You will be back in BASIC, and any program you in is still there.

PROBLEM PREVENTOR: If you select any of the following menu items, you will lose any BASIC program you may have in memory:

- Copy Files
- Duplicate Disk
- Initialize Disk
- Xtended Command
- Load Binary

If you need to perform any of these commands, save your BASIC program to disk prior to returning to the menu from BASIC.

So, from the DOS XL menu, "To Cartridge" will put you in BASIC (make sure the cartridge is there first). Nice and neat. But how do we get from BASIC back to the DOS XL menu? Simple: Following BASIC's "READY" prompt, type "DOS[RETURN]". This will return you to the DOS XL menu.

The following sections discuss the most common BASIC commands and statements which affect files on the disk. Please note that these commands should be issued while using the BASIC cartridge. That is, these commands should be typed only as part of a BASIC program or immediately after BASIC's "READY" prompt.

When the usage of the statement is being shown, the "{", "}", "[", and "]" characters are used to surround sections of the statement which are optional (not required). A "..." following a section of the statement infers that that section can be repeated zero or more times.

8.1 How Does BASIC's "CLOSE" Statement Work With DOS XL?

Statement: **CLOSE**

Purpose: This command writes any information which has been kept in memory and which is intended for the specified file to be written to the diskette, and then disassociates the file number (channel) and file which were associated by a previous OPEN statement.

Usage: CLOSE #fn

Arguments: "fn" -- file number (1-7)

Description:

After CLOSEing a file number, the user may no longer perform reads or writes (e.g. via PRINT, INPUT, etc.) on the file which had been associated with that channel.

PROBLEM PREVENTOR: A file OPENed for any form of output (modes 8, 9, or 12) should always be closed before the diskette containing it is removed or changed. The most common cause of crashed (no longer usable) Atari diskettes is failure to observe this rule.

HINT: Atari BASIC does not consider it an error to CLOSE a channel that is not OPEN, so it is often good practice to end a program segment by a line such as the following:

```
999 FOR I=1 TO 7 : CLOSE #I : NEXT I
```

NOTE: Both the END and RUN statements close all files (except file #0, which is used for keyboard and screen reads and writes), and can be used to advantage for this purpose when desired.

8.2 How Does BASIC's "ENTER" Statement Work With DOS XL?

Statement: **ENTER**

Purpose: This command is used to retrieve a BASIC program that has been LISTed to the disk.

Usage: ENTER filespec

Argument: "filespec" -- the name of the file you are going to ENTER.

Description:

The ENTER statement is used to retrieve a BASIC program that has been LISTed to the disk. As the program is being ENTERed into BASIC's user area, each line will be checked for proper syntax and converted into the internal (tokenized) form used by BASIC.

If a syntax error is encountered, the offending line will be listed with the suspected error location in inverse video.

NOTE: The line with the error will, nevertheless, be placed in program memory. In such a case, your program must be corrected before you can RUN it.

PROBLEM PREVENTOR: ENTER does not clear the user memory space. Therefore, if you wish to ENTER a new program, use NEW first. (Actually, this can be a handy feature when you wish to merge two programs together.)

Example:

```
You:           10 PRINT "THIS IS PROGRAM 1"  
              LIST "D:PROG1"  
              10 PRINT "THIS IS PROGRAM 2"
```

```
LIST "D:PROG2"  
NEW  
ENTER "D:PROG1"  
LIST
```

```
BASIC: 10 PRINT "THIS IS PROGRAM 1"
```

```
You: NEW  
ENTER "D:PROG2"  
RUN
```

```
BASIC: THIS IS PROGRAM 2
```

8.3 How Does BASIC's "GET" Statement Work With DOS XL?

Statement: **GET**

Purpose: This statement will retrieve a single byte of data from a specified previously OPENed disk file.

Usage: GET #fn,avar

Arguments: "fn" -- file number (1-7)
 "avar" - any numeric variable

Description:

The GET statement is used to retrieve a single byte of data from a disk file that has been previously OPENed using the same file number which you specify on the GET statement.

NOTE: The data that you are GETting from the disk file should have been previously written to the specified file using the PUT statement.

Example program:

```
10 OPEN #1,8,0,"D:TEST" : REM CREATE A TEST FILE
20 FOR I = 0 TO 255 : PUT #1,I :NEXT I
30 CLOSE #1 :REM WE CREATED IT
40 OPEN #1,4,0,"D:TEST" : REM NOW CHECK IT OUT
50 FOR I = 0 TO 255 : GET #1,X : REM CHECK EACH
60 IF X <> I THEN PRINT "BAD DISK DATA",I,X
70 NEXT I
80 END : REM END CLOSES ALL FILES
```

8.4 How Does BASIC's "INPUT" Statement Work With DOS XL?

Statement: **INPUT**

Purpose: This command is used to request data from the specified file number (or keyboard).

Usage: INPUT {#fn,} var {,var...}

Arguments: "fn" -- file number (1-7)
 "var" -- either numeric or string variable

Description:

When the INPUT statement is used without the "fn" option, data will be requested from the keyboard. You will notice a "?" appearing on the screen prompting you for the keyboard input. See your Atari BASIC Reference Manual for more details.

When the file number (#fn) argument is used, data will come in the form of ATASCII lines from the file that has been previously successfully OPENed using the same file number. Otherwise, the action of INPUT is virtually identical to the action when INPUTing data from the keyboard. That is, a string input is terminated by an ATASCII RETURN character and a numeric input by either the RETURN or a comma within a line.

NOTE: The INPUT statement cannot (generally) read a line that is longer than 127 characters in length. If you PRINT a line to the disk that you will later want to INPUT, it is best to limit the size of the PRINTed line to 127 characters or less.

Example program:

```
10 DIM LINE$(15)
20 OPEN #1,8,0,"D1:INPUT.SMP" : REM CREATE A FILE
30 FOR I = 1 TO 20
40 PRINT #1;"THIS IS LINE #";I : REM WRITE THE DATA
50 NEXT I
60 CLOSE #1 : REM CLOSE THE FILE YOU JUST CREATED
70 OPEN #1,4,0,"D1:INPUT.SMP" : OPEN FOR READ ONLY
80 FOR I = 1 TO 20
90 INPUT #1,LINE$ : REM GET THE FIRST LINE
100 IF LINE$(15) <> STR$(I) THEN GOTO 500
110 PRINT LINE$
120 NEXT I
130 CLOSE #1 : REM CLOSE THE FILE
140 PRINT "SUCESSFUL USE OF THE INPUT STMT"
150 STOP
500 REM WE GET HERE FROM LINE 100
510 PRINT "UNSUCCESSFUL USE OF INPUT"
520 END : REM ANOTHER WAY TO CLOSE THE FILE
```

8.5 How Does BASIC's "LIST" Statement Work With DOS XL?

Statement: **LIST**

Purpose: This command will LIST the program currently in memory to the screen (or to the file specified).

Usage: LIST [filespec]
 or: LIST [filespec,] linenol [,lineno2]

Arguments: "filespec" -- the name of the file you are going to LIST to the disk.
 "linenol" -- beginning line number
 "lineno2" -- ending line number

Description:

The LIST command is probably one of the most commonly used commands in BASIC. Most people know that the LIST command, when given all by itself, will LIST their program to the screen. Even when beginning and ending line numbers are given the results are predictable.

Now with DOS XL the LIST command can do even more. When used with a filespec, the LIST command will LIST your program to the disk instead of the screen. The contents of this file will contain text characters and can take up a large amount of disk space if you have a large program.

If you use the option where two line numbers are given, then only the lines from linenol to lineno2 (inclusive) will be LISTed to the filespec.

If you use the option where only one line number is given, then only that line will be LISTed to the filespec.

HINT: The ability to LIST a range of lines to the disk provides a convenient method of moving a subroutine (for example) to another program.

See also the ENTER statement discussion.

8.6 How Does BASIC's "LOAD" Statement Work With DOS XL?

Statement: **LOAD**

Purpose: This command will get a program that has been SAVED to the disk and put it in BASIC's memory.

Usage: LOAD filespec

Arguments: "filespec" -- The name of the file you wish to LOAD.

Description:

LOAD is used in conjunction with the BASIC SAVE command. Only programs which have been previously SAVED to disk may be LOADED. No syntax checking will be done as your program is being LOADED, because the program is already in internal format.

Generally, if you wish to keep a program on the disk, you SAVE it. Then, later, when you wish to look at it, modify it, or RUN it, you can LOAD it. BASIC does not remember the name that you use when you LOAD a program, so you can SAVE it again either under the same name (in which case the original version is replaced by the new version) or under another name.

Also, see the RUN command for an alternative method of LOADING a program which will simply be RUN and not modified.

Example:

```
You:           10 PRINT "THIS IS PROGRAM 1"  
               SAVE "D:PROG1"  
               10 PRINT "THIS IS PROGRAM 2"  
               SAVE "D:PROG2"
```

LOAD "D:PROG1"
LIST

BASIC: 10 PRINT "THIS IS PROGRAM 1"

You: RUN "D:PROG2"

BASIC: THIS IS PROGRAM 2

8.7 How Does BASIC's "OPEN" Statement Work With DOS XL?

Statement: **OPEN**

Purpose: This command prepares a file for access and assigns it a file number.

Usage: **OPEN #fn,aexp1,aexp2,filespec**

Arguments: "fn" -- file number (1-7)
 "aexp1" -- Read or Write (Input/Output) Mode:
 4 = input
 6 = directory access
 8 = output
 9 = append
 12 = input/output

 "aexp2" -- device dependent value (usually 0)
 "filespec" -- a proper DOS XL file name

Description:

The OPEN statement allows a disk file (or any device, for that matter) to be linked to a file number (channel) for future reference in connection with file input/output instructions (e.g., PUT, GET, INPUT, PRINT, CLOSE).

Comments on arguments:

The "fn" argument allows for a number between 1 and 7. The number 0 is reserved for the screen and can not be used in Atari BASIC. After a file has been OPENED with a given "fn", all references to that file must be made using that same "fn".

The "aexp1" argument allows the user to OPEN a file for a specific "mode", according

to the following table:

Mode 4: will OPEN the specified file for input only. Thus you can only retrieve data from the specified file.

Mode 6: allows you to access the directory on the disk.

Mode 8: is the opposite of mode 4. That is, data can only be stored to the specified file. See below for notes when using mode 8.

Mode 9: is used to add data to the specified file. The data that is added will begin at the current end of the specified file.

Mode 12: is used to access the specified file for input and output. Thus data can be stored and retrieved from the specified file.

PROBLEM PREVENTOR: After OPENING a file, the specified file number must be used to designate the file in other input/output statements. Two OPENed files cannot have the same file number, but it is possible to OPEN the same file with two different file numbers. Generally, such a double OPEN will have disastrous results.

NOTE: If a file is OPENed for output (aexp1=8) and the specified file does not exist then a file with the specified name will be created for you. If the file specified already exists, it will be destroyed and a new file with the specified name will be created for you.

PROBLEM PREVENTOR: A file OPENed for update (aexp1=12) can not be appended to under DOS XL or Atari DOS 2.0S. Only files opened in mode 9 will allow a file's size to be increased.

HINT: Mode 6 might, for example, be used from BASIC to find what files are on a disk and thereby allow a menu selection. The following program will allow a menu selection of all BASIC SAVED programs on drive 1, providing that the

program names do not have an extension (i.e., the programs should not have been SAVED as "D:name.ext" but simply as "D:name").

Example program:

```
100 OPEN #1,6,0,"D:*" : DIM LNS(40)
110 FOR I = 1 TO 20 : INPUT #1, LNS
120 IF LNS(2,2)=" " THEN PRINT I,LNS(3,10) : NEXT I
130 CLOSE #1 : OPEN #1,6,0,"D:*"
140 PRINT : PRINT "WHAT PROGRAM TO RUN ";
150 INPUT J : IF J>=I THEN GOTO 140
160 FOR I = 1 TO J : INPUT #1,LNS : NEXT I
170 CLOSE #1 : LNS(1,2) = "D:"
180 RUN LNS(1,10)
```

Try typing this in and then saying SAVE "D:MENU". Later, you can use the program by typing RUN "D:MENU".

8.8 How Does BASIC's "PRINT" Statement Work With DOS XL?

Statement: **PRINT**

Purpose: This command puts the ASCII equivalents of the given expressions to the file specified or the screen.

Usage: PRINT [#fn {;}] exp [{,}exp...] {,}

Arguments: "fn" -- file number (1-7)
 "exp" -- the expression can either be a string enclosed in double quotes, a string variable, or a numeric variable.

Description:

When a file number is used with the PRINT command, the specified variables are PRINTed to the disk file that has been previously OPENed using the same file number.

NOTE: Characters are PRINTed to a disk file in a manner identical to the way characters are PRINTed to the screen if the file number option is not used.

PROBLEM PREVENTOR: A "," after the #fn causes tabbing before the first character is PRINTed. A ";" does not cause the tabbing. Normally, the semicolon should be used.

See also INPUT.

8.9 How Does BASIC's "PUT" Statement Work With DOS XL?

Statement: **PUT**

Purpose: This statement is used to store a single byte of data to a specified file.

Usage: PUT #fn,avar

Arguments: "fn" -- file number (1-7)
 "avar" -- an arithmetic variable

Description:

The PUT statement is used to output a single byte of data to a specified file. The file number used in the PUT statement must be one that has been previously used in the successful OPEN of a file.

PROBLEM PREVENTOR: Data that has been stored in a file using the PUT statement can usually only be retrieved using the GET statement.

See also GET.

8.10 How Does BASIC's "SAVE" Statement Work With DOS XL?

Statement: **SAVE**

Purpose: This command will store a BASIC program on disk in internal format (not ATASCII).

Usage: SAVE filespec

Arguments: "filespec" -- filename you wish to SAVE your program under.

Description:

The SAVE command is used to SAVE your BASIC program in its internal format. This format is usually smaller than the text form of your program and will take up less room on your disk. All programs SAVED to the disk must be reentered using the LOAD or RUN commands.

See descriptions of LOAD and RUN for more examples and further explanations.

8.11 How Does BASIC's "XIO" Statement Work With DOS XL?

Statement: **XIO**

Purpose: This is BASIC's catch-all Input/Output command. If BASIC doesn't provide a function to access a particular feature of a device or file, some form of XIO can probably be used to do so.

Usage: XIO subcommand,#fn,aux1,aux2,filespec

Arguments: "command" -- see descriptions below.
 "fn" -- a file number. In contrast to most DOS XL read/write commands, XIO often requires that the file number be that of an un-OPENed channel. The XIO command dictates the usage here, so see descriptions below.
 "aux1" and "aux2" -- generally zero. These values are passed to DOS XL unchanged (and thence to the device being accessed), so the individual device(s) may require other values. None of the examples given in this section use these values.
 "filespec" -- a proper DOS XL file name.

Description:

Although, as noted, XIO can be used for several purposes, we will restrict our discussion here to those four XIO commands most useful to the Atari BASIC programmer. A discussion of the more advanced XIO commands is provided in the DOS XL Reference Manual available seperately from Indus Systems.

The XIO commands to be discussed will each be treated as a separate BASIC statement.

8.12 How Do You Rename A File From Atari BASIC?

XIO Command: **32 (Rename)**

Purpose: May be used to rename disk files.

Usage: XIO 32,#fn,0,0,filespec

Arguments: "fn" -- the file number of an un-OPENed channel.
"filespec" -- a proper DOS XL file name followed by, in the same BASIC string, a comma and a second file name. The second file name may not include a disk drive specifier.

Description:

It is suggested that "fn", the file number, be 7, since that channel is normally reserved for system read/write functions (which this certainly is). The only thing strange about this XIO command is the form of the filespec. Some examples follow:

```
XIO 32,#7,0,0,"D:TEST.SAV,OLDTEST.SAV"
```

```
DIM FL$(100)
INPUT FL$
FL$(LEN(FL$)+1) = ",BACKUP"
XIO 32,#7,0,0,FL$
```

Again, note that the second file name in both examples is not preceded by a disk drive specifier.

8.13 How Do You Erase A File From Atari BASIC?

XIO Command: **33 (Erase/Kill/Delete)**

Purpose: May be used to permanently erase disk files.

Usage: XIO 33,#fn,0,0,filespec

Arguments: "fn" -- the file number of an un-OPENed channel.
"filespec" -- a proper DOS XL file name, with "wild cards" accepted and processed.

Description:

If the file specified exists on the disk drive specified, and if the file is not PROTECTED (see next XIO command), the specified file will be permanently erased (deleted, killed, zapped) from the disk.

USE THIS XIO SUBCOMMAND WITH CAUTION: specifying a "wild card" (a file name including an asterisk or question mark) will erase all files which match the given name.

Examples:

XIO 33,#7,0,0,"D2:OLDPROG.SAV"
will erase the single file with the name OLDPROG.SAV from the diskette in drive 2.

XIO 33,#5,0,0,"D:*BAK"
will erase all files having a filename extension of ".BAK" from the diskette in drive 1.

8.14 How Do You Protect Files From Atari BASIC?

XIO Command: **35 (Protect/Lock)**

Purpose: May be used to protect disk files from accidental erasure and modification.

Usage: XIO 35,#fn,0,0,filespec

Arguments: "fn" -- the file number of an un-OPENed channel.
 "filespec" -- a proper DOS XL file name, with "wild cards" accepted and processed.

Description:

All files on the specified drive which have names which match the specified file will be "PROTECTED" by usage of this XIO command. Protection in the DOS XL environment simply consists of setting a flag in the diskette's file directory which tells the DOS to disallow either modification (i.e., OPENS in modes 8, 9, 12, etc.) or erasure of the file. Any DOS XL DIRectory listing will show protected files by means of an asterisk in the first column of the displayed lines (unprotected files have simply a space in that position).

Examples:

```
XIO 35,#7,0,0,"D:*.*"  
    will protect ALL files on drive 1.
```

```
XIO 35,#1,0,0,"D4:DOS.SYS"  
    will protect only the file named "DOS.SYS" on the diskette in drive  
    4.
```

8.15 How Do You Unprotect Files From Atari BASIC?

XIO Command: **36 (Unprotect/Unlock)**

Purpose: May be used to unprotect disk files to allow subsequent erasure and modification.

Usage: XIO 36,#fn,0,0,filespec

Arguments: "fn" -- the file number of an un-OPENed channel.
"filespec" -- a proper DOS XL file name, with "wild cards" accepted and processed.

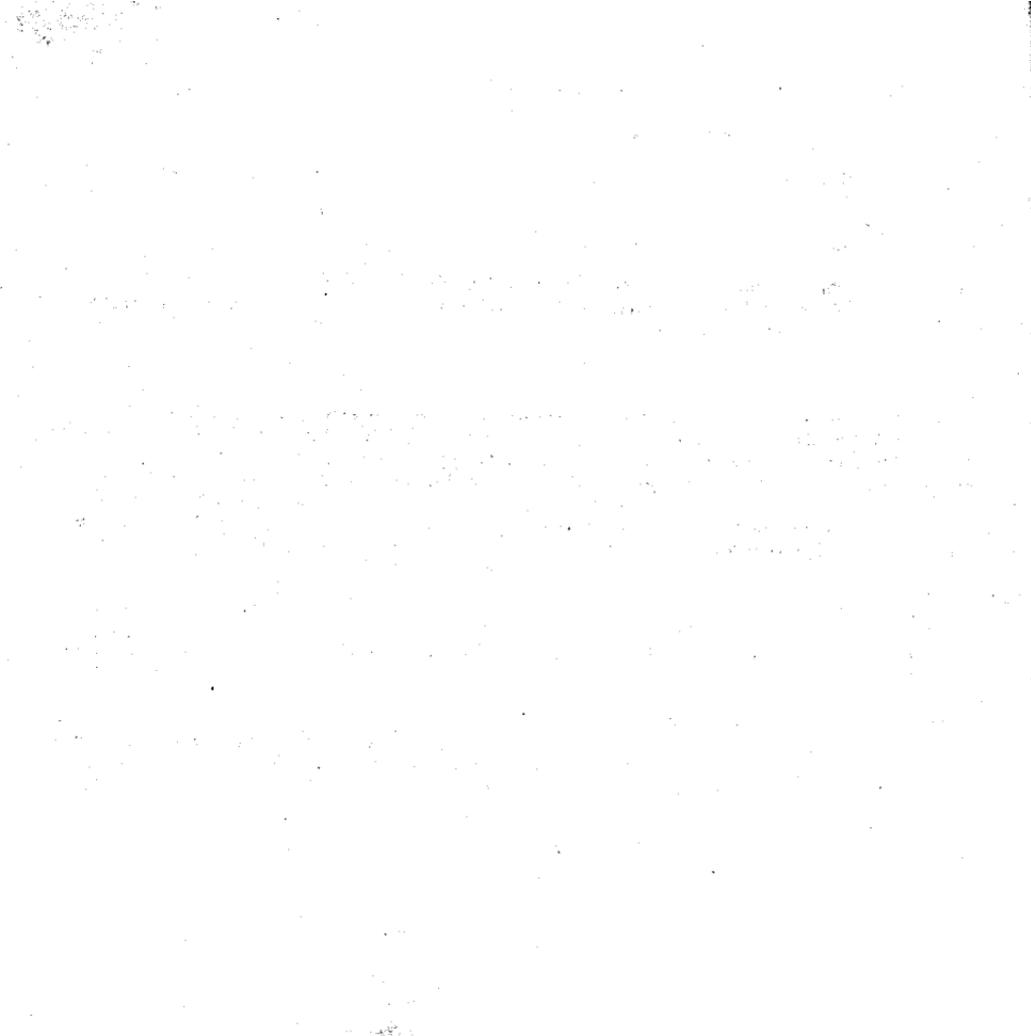
Description:

All files on the specified drive which have names which match the specified file will be "UNPROTECTED" by usage of this XIO command. Protection in the DOS XL environment simply consists of setting a flag in the diskette's file directory which tells the DOS to disallow either modification (i.e., OPENS in modes 8, 9, 12, etc.) or erasure of the file. Any DOS XL DIRectory listing will show UNprotected files by means of a space in the first column of the displayed lines (protected files have an asterisk in that position).

Examples:

XIO 36,#7,0,0,"D2:*.COM"
will unprotect all files on drive 1 which have a filename extension of ".COM".

XIO 36,#1,0,0,"D1:DOS.SYS"
will unprotect only the file named "DOS.SYS" on the diskette in drive 1 (this step is necessary before erasing that file, as you might do to gain more space on the diskette).



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