ACAS

Applewood Computers Accounting System

Stock Control

Reference Manual

v3.02

This document is the reference manual for Stock Control and forms part of the ACAS system components which is the Applewood Computers Accounting System and is :

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Which Includes :

*IRS – Incomplete Records System (used in place of GL)
*Nominal or General Ledger also referred to as GL
*Sales Ledger also known as Accounts Receivable and as SL
*Purchase Ledger also known as Accounts Payable and PL
*Invoicing (module/s linked into Sales and Purchase Ledger)
*Stock Control also known as Inventory with links to Sales & Purchase

Supplied with commercial versions only and subject to a yearly maintenance fee:

*Payroll
*Eshop link processing

* Not supplied with Open Source versions.

Each sub system has its own documentation as well as a complete system overview.

Date rewritten on to PC - September 1982. Stock Control rewritten 2009 in Cobol.
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1. Testing criteria to validate

Test teams:

White box:
PL changes:
to provide to SC
Abbrev #, order qty, order date, date due via Purchase Orders

SL Changes:
to provide to SC
Abbrev #, anal code, qty sold & others??

Remove this "entire" block after testing and update index.

2. Introduction

2.1. Basic introduction to ACAS and the source code

There are two reasons for supplying the ACAS system as source code but the major reason is that ACAS can be used on a very wide range of different computers and operating systems where it is impractical to provide different system for each one and the other reason is that ACAS has now been made Open Source in that it is freely available for everyone to use providing it is NOT offered for sale / rent or hire etc., and the reason for this is that the developer and lead programmer me - has now reached 78 year of age and therefore I have decided to make the previously commercial product available to all without any cost. Yes, I am getting old :(

All previous customers of ACAS who purchased licenses or on a monthly / quarterly rental agreement, now have the use of ACAS also FOC (Free of all charges). The open source product has had over the last year or two. many upgrades and updates, to provide extra functionality along with updated manuals.

The fact that it is all written in Cobol allows it to be migrated to another Cobol compiler if needed with light manual changes as required for a new compiler but be warned it does use many of the new features in the Cobol language up to and included changes in 2014, 2022, 2024 as well as extra functions created by the GnuCobol developers.

Cobol was created around 1959 and has been use ever since with over 200 billion lines of code still in production around the world and this figure varies from what site you search on to as to how many and as high as 600 billion lines, it is not going away any time soon as Cobol is written in easy to understand English that can be understood by any programmer although experienced Cobol programmers would have an easier time with understanding how to make changes to the code base.

Everyone is free to make their own changes to the source code to suit their specific needs where and as needed, although I am still around to help in these matters - health allowed.

2.2. How to use this manually

This manual has been produced as a .pdf file so that it will print on both A4 and US letter format paper. If you find that this is not the case, please let us know by email, see inside front page of manual for address. Read Building the ACAS system for more details as required.

This manual should be read **after** reading and actioning the manual Building The ACAS System. This will show you how to install the tools needed to build and then install the ACAS system from source. It contains a description and explanation of all warning and error messages used throughout the ACAS system and a detailed explanation of the ACAS system parameter file and it's set up.

For best results, read through this manual thoroughly at least once before using the system and do the practice run, outlined in Chapter 6.1 .
This manual supports v3.02 of the Stock Control system which is itself an element of the full Applewood Computers Accounting System (ACAS) at the same release level.

The Stock Control System documentation includes two manuals. This manual is the Reference Manual which provides all the background information and instructions necessary for successful operation. The other is a specification manual which contains technical information on file accessing and file descriptions. The specification manual is available only with the purchase of the system itself, however many if not most elements are included in the open source version of this manual and the others included in the set.

This manual divides into Introduction (6) , Reference (47), Operations (63) Sections, and an Appendix (71). The Reference sections deal with general concepts and procedures. The Operations section give additional specifics on running the programs.

While Applewood Computers is glad to provide helpful support to registered owners of its products, if you have a problem, please make certain you have read and understood the documentation and checked for hardware or operating system malfunctions before giving us a call or contacting us by email (with ACAS as the first part of the subject line) at the address at the inside front page of this document.

Updates in the form of defect fixes (bugs) as well as additional features and functionality are made available as needed to registered users who have purchased a maintenance and support contract. See inside front cover for address details for Applewood Computers. As time permits (usually within 7 days), these updates are passed through to the open source version sitting on our website at http://applewood.linkpc.net/files/acas/nightly-build and at
http://www.sourceforge.net/projects/acas.
Note that these addresses only hold the open source versions.

The system as supplied, relies on the fact that the SL & PL (Sales & Purchase Ledgers) systems are already set up along with their primary files including the analysis code file if, the system parameter file has the SC (Stock Control) link to SL and PL (Sales and/or Purchase ledgers) set to Yes.
Failure not to do so, will result in multiple non-recoverable system errors until this is done.

You should also set up either IRS or GL (General Ledger) or even both, prior to Sales or Purchase at least with a basic chart of accounts. IRS comes with a working example of a limited company accounts and is therefore, easier to set up and use for any company of 10 million or less turnover with more flexibility than GL.

See the manuals for each sub system for details.

If you have linked up the primary parts of ACAS namely Stock to Sales, Purchase and IRS so they talk to each other, the data from one sub system will automatically be passed to the others to minimise effort. So that orders taken through using Sales Ledger will be reflected in order quantities in Stock that in turn are also updated by Purchase Ledger when new deliveries arrive.

E-Shop should also be set up and configured to use and link to the tools you use for this purpose. The E-Shop system element is not part of the open source version of ACAS, due to copyright issues that cannot be resolved.

You will need access to its full documentation to use it at maximum effect and these comments also apply to any bought or rented in online ordering system but you will require full details of all files used and that includes the data structure or layouts of such so they can be used to link between the online system and ACAS data files.

Payroll is totally independent of all other systems other than a link to IRS if set up, to pass weekly/month totals for business account purposes. Due to the nature of taxation changes that can occur every six months, it must be on a maintenance contract.

At the time of writing, the option of this element being made available as open source has not been taken due to the need for it to be under maintenance throughout it's service life due to the requirement to keep up, with any government legal changes in relation to taxation and therefore Payroll, along with the set up requirements for definitions of all the deduction and other tables etc. This is different for every country it would be used in.

However there is a Payroll version written in CBasic that is available but dates back to 1981/2 and has had no updates. If supplied, it is a folder of its own with documentation in tex. The intention was to use it around 1982 for the UK and possibly other European use, but was felt not suitable without a great deal of changes and in any event needs migrating over to another Basic compiler - these days such as the multi platform FBC (Free Basic Compiler).

Like ACAS it is offered free of any charges if you wish to play with it but as said above, will probably require a lot of work to get it running say using the FBC compiler.

If it is not included, and you want it get in touch via email address shown on inside front page but should be found on my website along with the rest of acas at:
http://applewood.linkpc.net/files/acas/nightlybuilds

This is a nightly build of the development area as used during any programming by myself or at https://sourceforge.net/p/acas/code-v3.02/HEAD/tree/Basic-Code

just for the Basic code that as said before, dates back to the 1981/2.

3. Features and Facilities

Each sub system that makes up ACAS has its own documentation as well as a complete system overview and user guide as well as installation and set up guides.

The system has grown up from a product written in machine code and assembler for IBM 1401 and ICL 1501 in early 1963/4, to one written in CBasic. Microsoft Basic and finally Cobol as a total rewrite, in its many guises and compilers from Micro Focus Level 1 Cobol, Cis Cobol, Workbench, ICL 1900, 2900 new range Cobol, IBM Cobol II and finally GnuCOBOL and this last one unlike all the others, is free to obtain and use on as many computers as is required.

This latest version (v3.02) by various system parameter options, allows for the storage of data using standard Cobol indexed files for users with usability for the smaller company without the facility of a computer support department or others with such skill.

For those that require it, the usage of a rdbms (Relational Database Management System) i.e., MySql, Mariadb and later Oracle, Postgres, DB2 or via ODBC) is also offered and here the use of a SQL pre-compiler is used where sources containing SQL is translated into standard Cobol source that is understood by the GnuCOBOL compiler.

This allows the ACAS system to be used by many users at the same time across different offices or sites using the same rdbms server or multiples running in parallel.

One aspect of Stock Control (which is a rewrite created around 2009), if the business uses more than one storage facility for stock, such as office stock for the dispatch of ordered stock items and say one or more warehouses to store stock for which there is no space to do so in the office.

For this, you need to :

1. Create your master stock file for all products.

2. Create a new folder for each warehouse say named whse-1, whse-2 etc for warehouse one and warehouse two (you can, of course name them anything you like, providing it is meaningful, such as warehouse-1, warehouse-2, or by location / address) and copy the files stockctl.dat* from the primary folder for running ACAS (such as ACAS) to each folder created under it for example :

```
/home/ACAS
/home/ACAS/whse-1
/home/ACAS/whse-2
```

or

```
/home/ACAS/ThreadneedleSt
/home/ACAS/NottyAshLane.
```

etc.

3. Copy from the primary folder (ACAS), file `system.dat` to each newly created warehouse folder.

If, you are running a *nix OS such as Linux you should use ln (to link) the file from the ACAS folder to the new folder, i.e., in new folder whse-1 do:

`ln -s /home/ACAS/system.dat /home/ACAS/whse-1/system.dat.` Now any changes made to the file will be seen in all other folders that have the linked file set.

4. You will need to create a small script that can be run from the console say named warehouse-1.sh that sets up the file path for this that then runs stock. This is stored in folder ~/bin, which is where all the programs and scripts are stored for the ACAS system.

An example but do not include lines starting with "--" :

```
--
# Script to run stock for warehouse-1

cd /home/ACAS/warehouse-1
export ACAS_LEDGERS=/home/ACAS/warehouse-1
stock  [ or use ACAS which will allow you to select the ACAS subsystem to use. ]

exit 0
--
```

Do the same for any other warehouse areas.

5. Go in to each folder / directory and run the above script making any needed changes such as stock locations for all stock items, although using the same locations from the primary system will save you some typing time if it is practical as well as the actual stock held for each warehouse and change quantity held to actual held stock stored there. Produce a report of the current stock for each warehouse and double check that the quantities are correct. Remember you will need to run Stock Additions for each of the warehouse for all stock that is added to the storage area.

If needed, do the same for the primary stock area as used by the dispatch/packing team.

Now, when stock gets to or below the minimum for reordering where there is stock held at a warehouse raise a dispatch request for it that reduces the removed stock held in the system for that warehouse, and once it arrives in the office, issue a stock addition entry for the same stock item number.

You might want to also consider creating a single sheet document that can be used to record the stock movements for the warehouse and the primary storage area that can be used as input for each stock control area. This should contain Stock item number, Description, Supplier name and number, quantity received and location. Any packing note supplied with the stock should be validated against actual received quantity and any discrepancies noted so that the purchasing team can raise the issue with the supplier.

There is of course other variants to doing all this including using the warehouse as the packing department but many such areas tend not to be heated or be otherwise a suitable working environment but if it is, and you have internet faculties there, you can add a printer connected to it to produce packing notes.

The Applewood Computers Stock Control System provides small to medium businesses with up to date and accurate information on the quantity, value, and activity of their stock items. The Stock Control system ***must be set up after Sales and Purchase Ledgers*** but

specifically the PL (purchase ledger) suppliers and the default analysis codes as well as the default analysis codes in SL (sales ledger). These are needed and expected in stock control. Stock Control has been designed to serve as the central program of a complete stock management system. The present Stock Control System is the first component of that complete stock package. It stands able to meet the full needs of many businesses. The system performs all the basic stock control functions such as adding to and deducting stock, adding new items to stock, deleting items no longer carried, keeping track of quantities on hand, on order, back-ordered, and stock values. Access to file records by stock item number, both abbreviated and the full bar code (ISN) type number is quick, allowing timely management information and fast customer service. If using Sales Ledger along with invoicing a link exists to pass to invoicing, details for all stock items including retail price, current stock level, description & analysis codes which in turn updates the current stock position after the invoice has been created therefore ensuring that the stock levels is always correct. Stock control will pass on any movements such as to IRS as well as analysis records to the correct other sub systems saving time and user effort.

The default audit option lets you create an ongoing hard copy record of stock additions and deductions both at the time of entry and at the end of week, month or quarter. If data is accidentally entered incorrectly, or if discrepancies arise between your accounting and stock records, the hard copy transaction proofs simplify the job of tracking down the errors and hopefully the reason why. For accounting and audit purposes this option should always be on. The tax authorities for many countries, will require this information to be available should an examination be required, as well as all records and reports for up to 7 years (United Kingdom), other countries may be different.

The Stock Control System generates a number of informative reports, including:

1. Detailed printout of the Stock Item file, that includes information on supplier reference numbers, retail price, average unit value, most recent unit cost, quantity in stock, reorder point, reorder quantity, date ordered, date due, quantity on order, and quantity back-ordered. In addition, if the WIP (work in progress) system flag is set, then various Wip/Bomp (Bill of Materials Processing) fields are also available during entry and printed on all reports. [WIP and BOMP are treated as the same].

2. Stock Activity report that details the current period or period to date activity for all or a selected range of stock items. In addition to current quantity on hand, retail price, unit cost, and stock value by item, the report displays quantities added, quantities deducted, and the net change in stock.

3. Stock (activity) History report that provides stock movement history over the year.

4. Stock Valuation report that gives the average value of the item, the replacement cost, stock room quantity, stock room value, retail price for each item, and the total stock value for all items included in the report.

5. Reorder report that automatically selects all out of stock items, items below the reorder point, or items on order, as well as a range and variation of these items.
6. Location Report that provides Location, Item and Abbreviated values as well as Stock held quantity and this report can be separated by the first number of

characters as input at the beginning of this process.

See Chapter 8.7.1 for sample reports.

The Stock Control system uses, via a menu system, a small number of programs and even less if you are integrating Sales Ledger invoicing for all Sales and using Purchase Ledger for the ordering of stock and specifying that ordered items have arrived so it can pass on all incoming stock to the Stock Control system. This will remove the need to use the optional program namely Stock Movements (st020) other than for reporting. Note at this time PL link is minimal and stock will need to be manually added to as it arrives in the warehouse etc. If you are using any type of E-Shop system such as available on a website for customers to order your products for delivery then this can be co-linked to Stock Control, Sales Ledger to produce the invoices, picking lists & delivery notes to go along with the purchased items where all three reports can have the specific printer selected so that the printed output will be available at the correct location i.e., your packing department.

So for a linked system, the Stock Control programs needed for the system via the menu program are :

stock - Stock Menu – Can also be used fully automatically via a job scheduler.

st000 - Start of day – Sets the date to today's date normally, but can be changed.

st010 - Stock Item Maintenance covering; creating new products or amending details, delete a product no longer stocked, and other functions.

st020 - Stock Movement Entry; i.e., Additions, Deductions, and Reporting.
This is needed for both unlinked and linked (reporting only).
This program also updates any BO (Back Order) records that might exist if new stock has arrived for any.

st030 - Stock Control reporting; Stock Movements, Valuation, Activity, Re-Order, History, Location, full Stock report of all items and lastly a full report by descriptions.

st040 - Clear down period totals for all stock for Month or Quarter or Year having transferred the Monthly and Quarterly figures to the yearly totals.

Infrequent usage :

st050 - Stock file compression. Only needs to be used if files are used as against rdbms & yearly or so when a large number of stock records are held with high volumes deleted during the year.
It helps to keep the size of the stock file as small as possible as file uses 400 characters (bytes) per record.
That means for 1,000 stock records will use 400k of disk space – no, not really a lot of space but if you have many such as 100,000's of different stock items, then useful. This process will also rebuild the indexes for the stock file.

st060 - Bespoke stock file Import from older stock systems. this program must be modified before use to match up to the documented file & record layouts of the old system.

If Sales invoicing and Stock control not linked:
This, is not recommended.

st020 - Stock movement entry, additions, deductions & reporting will be in use daily. If it is linked, then the system will take care of this for you.
st020 and st040 Can be run in Autorun mode via the stock program by running it with two parameters that selects this mode for each program. See later in this manual for details.

4. General System Usage.

Like all of the Applewood Computers packages, the Stock Control system employs the most advanced human engineering techniques. Defensive programming ensures successful system operation and trauma-free learning. Edited input and logical commands make for the clearest and easiest operation possible. Note that some options and functionality varies depending on the Cobol compilation system used to build the system components.

See Chapter 15 (Command Summary) which gives details of the various keys that are used to move the cursor around the screen.

Variants of ACAS may also support system display and data entry, etc, via a web browser so that other users within the company can access the same data running on a specific computer providing that a web server (such as Apache under Linux) has been set up on that computer to act as the ACAS server. It is a wise precaution to ensure that this computer is NOT accessible from outside the company LAN (Local Area Network) unless needed, in which case access should be protected via a password controlled system.

The same applies if you want to let any users use ACAS via a home computer via the internet where ACAS has been installed on a Linux based computer used as the ACAS server. Each user must be set up on the server and belong to the Group account ACAS where ALL users have a password set up that is secure and in addition it is recommended that additional security procedures be used such as including all users computer MAC codes so that the server can verify that they are valid users.
These user's must log in to the server using the **ssh** protocol only, and not telnet type services as these are not secure at all.

Speak to your IT department for assistance on this. Otherwise, the standard (Open Source) system will rely on the security offered by Linux in separate passwords for each user that must not be easy to guess. These users should belong to the same group for ACAS. If users need to be restricted to using one of the sub systems such as stock, sales etc then a group account must be set up for each one and each user made a member of the specific group, i.e., for stock use say group stock, for sales use group sales the make each user a member of the system they will be using and not for one's they must not have access to. Of course this is making security higher but for many business just using acas as the group all users belong too should suffice - just depends on how much you need to secure the system.
There are various tools in Linux to help improve the security regarding logging in remotely such as Pam but there are many others, again contact your IT department for help.
The same applies to users of Windows 10 or 11 as for security reasons alone older versions of Windows must be rejected as they are not supported by bug and security fixes. Here, version 7 no longer gets updates (unless you have paid a high fee for a subscription for such) and is therefore a high risk by being able to be broken in to by unauthorised persons. Treat security as an important factor in the way your systems are set up regardless of the systems used. Remember to ensure you have also set up a daily or more often back up procedure for both on site and off site back up storage, if only because of hacking and this applies to the whole of the acas data files as well as the rest of the computer system used for acas and any other company wide systems.

5. Overview of Set-up and Operation

Because the Stock Control System (as all elements of ACAS) is menu driven, you run the processes by selecting them from the system menu. The Stock Control system also employs a standard screen formatting system that simplifies data and parameter entry. By moving the screen cursor from field to field within the display using the TAB key etc, you enter or change the values in the fields. The system edits your input, and issues descriptive error messages to ensure smooth operation. See chapter 13 for keys used.

5.1. System Set up

THIS MAY NEED TO BE REPOSITIONED AS IT IS NOT IN LOGICAL ORDER

Following is a list of processes to be completed in order.

1. Decide on the computer that will be used to host the ACAS system. It does not need to be a brand new model with the fastest CPU and lots of memory (RAM) but it is recommended if it will play host to a number of users say within 12 months of operation to be powerful enough to cope with most of them using the system at the same time so it is suggested to use a four core CPU and a minimum of 4 - 8 GB of Ram. In addition a reasonable speed hard drive to store your data, system applications and the O/S (Operating System), such as a SATA III based hard drive and yes, you can just use a SSD and for this I would recommend a Samsung 850, 860, 950 - 970 series or even later drive and here this is based on actually using them on a server. The size of a SSD can be from 256 GB up unless the SSD will only be used to store the O/S such as Linux and its core programs etc. If doing it this way then a SATA III hard drive with a speed of 5400 - 7500 rpm speed such as a Western Digital Red or Black drive will fit the bill without it costing a lot while giving a warranty of 3 and 5 years respectively and yes, they usually last a lot longer. If using a SSD, read the discussion about SSD's in section 12.3 page 80.

2, Decide on the operating system and here I recommend using Linux and there is a lot of different distributions available and of the one's I have used, I can recommend Mageia and Ubuntu (using the LTS versions) based on personal experience. In both cases use a 64 bit version assuming the computer you will use has a 64 bit CPU and almost all have. The LTS is a five year version that supports all updates both security and bug fixes for a duration of, yes five years and in addition provides a upgrade path for the next release of the LTS (Long Term Support) version. Mageia does not have a LTS facility.

3, Having selected on the OS download it and then install it. Note that Linux is a free to obtain and use system, but some, such as Redhat can be expensive and for a small to medium company you have no reason to use such a version.
For technical issues using Ubuntu or Mageia there is a good forum community for each distro (distribution) where problems encountered can be discussed and a quick fix found if not already reported in the forums by a previous user and to do this use their search engine with the issue typed in.

You can download these distro's direct from their websites at :
Ubuntu : https://ubuntu.com/download/desktop and
Mageia : https://www.mageia.org/en-gb/downloads

In both cases you can create a bootable USB memory stick (see their website for details) and then boot to it from a just turned on computer.
The computer you are using to download Linux could have a copy of windows running and providing it is v10 or later you should not have any problems as both distros will spot the existing system and install Linux along side windows. If the computer to be used does not have any O/S on it and you have another computer, download to that and create a USB memory stick from that one. Then insert the memory stick to the new computer and restart or boot it (you might have to tell it to select what O/S to use using the Delete key or another and this usually appear at the computer start up sequence - assuming you have the monitor on before hand.

When installing Linux for the first time it will ask you for your user name and password and possibly that for the master user - root. Make a note of both user names and passwords as you will need them and without the password you will not be able to use the computer.

Most of these distro's ask if you would like to update the system after the system has been installed and you should say yes to this - again you should be connected to the internet using your router and for the fastest download speeds use a LAN cable connected to both the router and the computer before you start but a Wi-Fi connection works, it is just slower to download.

At this point you do not have to think about adding other users as you can do this at any time later.

It is 'assumed' here that you will use your user name as set up from the above for the install and use of ACAS but you should consider using a specific user for this, other than yourself - be original say, and use the user acas. Doing this with Linux to create a new user and Group of the same name.
All users of the ACAS system must belong to the acas group in order to use it otherwise they will not have access to the programs nor the data files. If you are using the RDB database from MySQL or Mariadb for most distros the users do NOT have to be members of the mysql as you will allocate their user name with a password to this service when setting up the ACAS database on the mysql system.

The benefit of using a database over Cobol data files is that it minimises any issues when accessing any of the sub systems by more than one user at the same time doing exactly the same thing such as entering invoices. The simple way of getting around it and as used by the commercial users is that one user enters in the morning and another the afternoon and the same applies if working the weekend. Of course this only really comes to a head for busy companies when you get a lot of orders outside of an online ordering system.
For the online systems they can access the Stock Control system to check on availability of stock in real time and then reduce current stock by the order quantity ready for the next possible order of the same product. The same applies to generating receipts and invoices to be printed using ACAS and likewise picking / packing sheets for the packing team.

Here the benefit of ACAS using FH (File Handlers) for reading and writing data to files and or the database. These FH can be called by the online system as they are accessed using the C call convention so that the data can be shared across systems. For more details on this, see the source code and the ACAS- Technical manuals.

That said only ONE user should be adding Invoice into Sales or Purchase Ledger at any one time and this is due to the automation of invoice number being allocated otherwise there is a risk of a attempt to use a duplicate invoice number which the system will refuse when saving the transaction. In the latest versions of ACAS this has been dealt with as every time a new invoice is allocated the next invoice number to be used is saved on the ACAS parameter file for use for the next invoice, regardless if it is the same user or another.

In order to set up a new user, all distros have specific programs to do this and usually via a pretty gui application such as for Mageia you would use the Mageia Control Centre then select "System" from the left menu list then select "Manage users on system" near bottom left. Select "Users" and you will see a list of the current one's installed and by selecting "Group ID" it will be relisted by ID so look at names where user ID starts from 1000 (the one's below that are for the system applications). You will see your user name there as more than likely set to 1000 so now using the mouse and the cursor select the first icon from the left which will highlight text saying "Add a user to the system" so left click that and you will get a few boxes to enter the new user name and here enter your chosen name for the ACAS system, say acas, the same for the login name and now choice a password and record it some where safe it will also ask you to confirm the password as the next box and click OK and you are now done adding this user.
You should use the same procedure to add all other possible users within your business that WILL use the ACAS system in whole or part such as just Sales Ledger. You can do this at any time later. After each user has been entered in this way then go to the "Groups" option and scroll down until you find acas and double click it. In the new box select "Group Users" and you will get a list of all of the registered users in the system so scroll down until you find a user that you wish to add to the group then click it to select, continue doing this for all the users you wish to add and when done click the OK button. Now select File and Quit to leave the process and again at the top level menu. You are now done at least until you need to add other users. All users, groups etc., are stored in lower case.

A similar process is used for other Distros including Ubuntu but they will use another name for the gui program to use.
These two processes can also be done in a terminal program and use the commands groupadd and useradd and to get a detailed usage for each one type man groupadd or man useradd to get the way to use them - the GUI tool is the easiest to use for a *nix novice.

4. If you have not done so already, boot to the new O/S

Find and start the distro's package manager and search for ssh - you want both the server and the client packages and they must be the same version number and pick the latest version in both cases.

5, At this point you can follow the procedure below to install the various elements for ACAS which includes the Cobol compiler and if not already installed the GCC C compiler (this is normally installed when installing Linux.

It is possible that your distro has the Cobol compiler available, so use the package manager to search for Cobol and if it is version 3 or later you can install that or install the latest which at time of writing this (16 August 2023) is v3.2 final release, from the website

at https://sourceforge.net/projects/gnucobol/files/gnucobol/3.2 now select file gnucobol-3.2.tar.gz - This is for Linux.
Note that the later versions will have various bug fixes installed, so it is always worth using the latest version if at all possible.

Create folders cobolsrc and cobolcompilers using
```
mkdir cobolsrc cobolcompilers
```

Continue with the install process as outlined in the manual -
ACAS - Building the ACAS system

6. With the compiler and installed and tested as per the instruction and downloading the ACAS sources and storing them in folder cobolsrc and building the ACAS system, you can now follow the ACAS set up procedure as follows:

Step 1- The first step in system set up, is to create the system data directory for use by the various ACAS systems. If you used the standard installation script install-ACAS.sh, this has been done for you by creating the directory (directory and folder means exactly the same thing) ACAS in your home folder as well as installing all of the programs in your local bin folder.

Step 2 - Set up the system parameters and this is done (and used) for all of the elements in the ACAS systems. There are two sets of parameters:

1. General System Parameters: These determine the company name, page length, system date, date format (European, International or American) the normal print spools (via the Linux printer support package - Cups) to be used, etc.
2. Groups broken down by sub system (i.e., IRS or General, Sales, Purchase, Stock etc.) is the specific parameters required, that must be set up for each system or ledger.

See the manual ACAS - Building the ACAS System, for detailed instructions as well as the meaning of all settings within system parameters. The same manual should be followed for setting up the pre requirements for S/L and P/L analysis codes, IRS (or G/L) Chart of Accounts etc.

Step 3 - You need to have set up IRS (or GL) at least with the default CoA (Chart of Accounts) although you should make any needed changes to the supplied text file (using a standard text editor) prior to setting up the CoA, if only to match up with your operations - see the IRS manual for more details. Don't worry if you have missed a few accounts as you can always add more later at any point in time using the IRS system. Remember to print out the CoA for reference when setting up the other systems using the ACAS parameter file data for these systems as some CoA account numbers are required for the automatic systems to operate.

Step 4 - You ***must*** have set up Purchase Ledger prior to setting up Stock Control as data created in the ledger for suppliers is used but is not essentially required in Stock Control, as well as the analysis codes which are. Failure to do so, will result in an appropriate error message (ST104). Setting up the default analysis codes in Sales or Purchase for that matter will set up the one's needed for the other system. You may still need to set up one's

for each that will help your business to see all of the statistics generated by the ACAS system day by day but this can be done a little later as and when required.

Step 5 - You should also set up Sales Ledger, at least the analysis codes (see Step 4), and one customer account i.e., Cash Sales will do.

Step 6 - Build the Stock system Item file by entering information for each stock item having, ***already*** set up the ledgers. Stock control as three fields for holder the Supplier account numbers as first, second and third choice of supplier for all stock items although this is NOT a compulsory field but is recommended.
At this point do not enter stock quantities as these should be entered through the Add to Stock process. This should be done after a stock take is made when no orders etc is taking place, such as the weekend or a bank holiday using printed stock lists to record such for each product sold in the margins of the report - to help save time print off more than one copy and get your staff to help do this - it might be an idea to get more than one to go through the same stock products counting where you can confirm the counts.

This process should also be done at some periods during the year to verify that recorded stock held, matches actual but again say during the weekend when the business is other wise closed for orders.
Any discrepancies must be verified and efforts to find out why there is any differences and for this purpose breakages, theft, etc must be recorded and the stock item deducted from Stock Control. Of source the reason why it is happening should also be resolved. This applies to both less stock and more than is recorded - both are equally important.

If you are migrating your Stock Control system from an older software product you can use the program st060 to help transfer all of your stock to ACAS in one process ***but*** you will **need** to modify the program to match up with your old systems data in both format and content. You may well need to contact the software developers for these details and advise about the transfer if needed. It is important that copies of the file layouts used along with the detail of each field in each record for every file is obtained where ever possible as otherwise you will have to enter each stock item from the old systems report to the new ACAS system.
The use of the old system file layouts is essential to help you save time and the risk of errors when entering the information to ACAS. - Read the source code of tst060 program, for more information. A version of st060 such as a new st070 can be created to do the reverse if needed at some time in the future again will need to file and record layouts of the other system in order to automate the process.

If you do not have the resources to do this yourselves we offer a bespoke service to do this for you, but it is chargeable on a time and material basis. Therefore you must have obtained the record formats and data layout of the old system before hand as well as a copy of the data files. Once programming has been completed and tested against this data a up to date copy of the files will be required to transfer the data and this best over a weekend or other period of no new orders.

See inside front cover for contact details.

Read **all** of this manual for suggestions and procedures to adopt, when using this system and the manuals for the other sub-systems for their set up procedures. For detailed

procedures for building and installing the ACAS system see the manual ACAS - Building the ACAS System, which sits with all the other manuals, in the ACAS-Manual folder.

This manual also includes all of the warning and error messages that can be produced from all of the ACAS systems in one place, along with additional information about common processes including the Parameter Set up functions and the data required.

A manual ACAS - A basic introduction to ACAS both overview and operations is in preparation as well as System Set up Procedures.

5.2. Normal Operation

Once your system is set up and the stock Item file loaded with stock data, normal operations involves: adding quantities received when delivered, deducting quantities moved out of stock (if using SL invoicing this is automatic), and producing the various reports.

You can access stock records from the item stock list in two ways:

1. By entering the full stock (bar code) number.
2. Entering the abbreviated stock number if you are using them.

Besides entering the quantity to be added to stock, you can also change the unit cost, date ordered, date expected (due date), quantity on order, and quantity back-ordered. If you want it to, the program automatically recomputes the stock value for that item by the weighted average method and this, is the recommended method). See chapter 8.4 for more information.

*If you choose not to calculate the value of your stock by the weighted average method, yet still wish to keep track of your stock value, you **must** calculate and change the stock value manually. This is one area that errors can very easily occur, so it is recommended that you keep to the default method.*

To deduct stock, you enter the quantity leaving your stock. If you desire, the program automatically recomputes the value of the remaining stock by subtracting the value of the items leaving stock. This value is determined by multiplying the average value of a stock item by the number of units leaving stock. If you use the Sales Ledger system and select the appropriate flags, then Sales will also update the stock file as you issue invoices or receipts, ensuring that the system is always up to date. The same applies to Order Entry or Eshop processing in that both can pass sales stock deductions to Stock Control that help to automate the process.

Should you mistakenly add more units to stock than were actually received, you can fix the error by reversing the transaction. Reversing a transaction is handled by adding a negative amount to stock, not by deducting the stock in the amount of the error. This method of "backing out" a transaction maintains the accuracy of the stock activity report. Erroneous deductions are handled similarly. When using linked SL invoicing, issuing a credit note against a previous invoice will do the same, by returning credited items back to stock. This assumes the stock never left or that they have been received back.

Assuming you have chosen the (default) audit option, normal operation involves generating transaction proof reports after each session of adding to stock or deducting stock. The transaction proof reports are a hard copy record of the actual entries to the system, and thus serve as a check on the accuracy of your entries, or a way to trace bookkeeping discrepancies. Each transaction proof is numbered and dated to provide a continuous record of your entries to the system. At the end of a current period, two reports should also be produced that shows all additions as well as deductions, listed separately including deductions that are produced by Invoicing or additions by Purchase Ledger. Over time using the SC system may show that the deduct report is no longer required, in which case do not bother printing it out however for audit purposes an accountant might well

want to see them. Check this with yours.

At the end of each current or to-date period, the **End of Cycle Processing** program lets you reset or zero out the activity counts optionally for current period or the year. Make sure you have made a back up of all the ACAS data files before hand just in case you did this in error. The only file affected by this is :
stockctl.dat
stockctl.dat.1
stockctl.dat.2
stockctl.seq You may well not have this one, as created by the stockUNL program.

5.3. Report Production

Generating reports is a matter of choosing the report from the system menu options B, C or D and telling the system which report options you want to use so for :

Option B - Stock file Maintenance offers sub option 6 Print Stock record,
Option C - Stock Movements offers option 5 End of Month Audit Reports,
Option D - offers seven options and these are :

1. Valuation Report
2. Activity Report
3. Order Report
4. Stock History Report
5. Stock Report
6. Stock Report by Description
7. Location Report by Location

Each one other than option 6 provides extra facilities, such as reporting only on a range of stock items. For the last one it is always assumed that you require the full list of items sorted by description. Option 7 can have a start and end range of locations as well as specific number of characters at the beginning that will define when a page break occurs in the report for use in different stock room's or buildings.

Chapter 7.3, presents examples of the reports available from the Stock Control System.

5.4. File Maintenance

When a new item is added to the stock item file it is automatically places in the correct position within the file, building the three indexes i.e., bar code stock number, abbreviated stock number and the stock item description. It should be noted that the description index is only created and maintained within Stock Control and otherwise it is not used. This index is designed to be optionally used in the Sales and Purchase Ledger sub-systems during searches. [See the ledger manuals for more information].

Stock items no longer held in stock, can be removed by the **Delete Stock records** menu option within menu option **Stock Item Maintenance**. After a deletion is made, the record is no longer available and is not recoverable although the space the record used still exists on the file. If many such records are deleted then it is recommend (after backing up all the

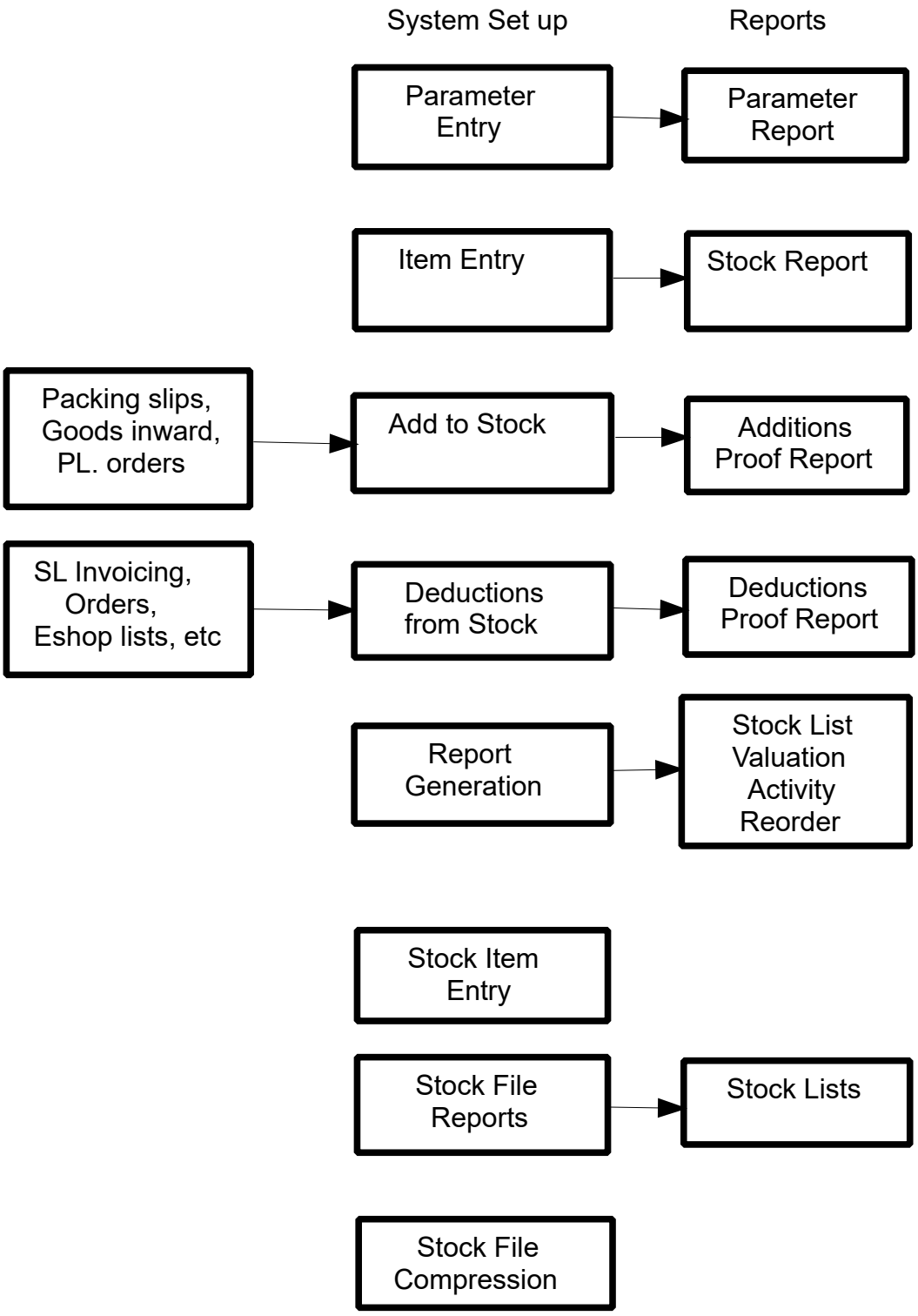
ACAS data files) that menu option **Stock File Compression** is used to compact the stock file to save disk space and improve the speed in accessing records during processing. In some cases, the space created by deleting records will be reused when adding new stock records however, the indexes will often get larger, and running the file compression function will keep the sizes of the three indexes under control. This function has no meaning when using RDBMS instead of data files.

This is only needed if you have a large number of stock items say well in excess of 1,000 as well as a lot of deletions without many new items added, i.e. 10% of total records, and we recommend this it is only used infrequently i.e., once per year, and do not forget to ***back up all files*** prior to running the **End of Cycle** processing or the **Stock File Compression**.

Note that if you have correctly set up the automatic back up function via the menu option 'X' then back ups will be done after each request to leave the ACAS system from any of the system menu's.

See the diagram at 5.5 for a process flow however note that the flow input to Deductions from Stock, when using linked SL Invoicing is automatic whenever receipts, invoices or credit notes are created. Proformas does nothing in relation to SC but will when they are changed to a receipt.

5.5. Stock System Operational Layout



6. Practice Run

This Practice Run section provides a quick hands-on introduction to the Stock Control System. Follow the instructions carefully and make the entries exactly as directed. The practice run covers setting up directories containing the ACAS software, the backup scripts and the data files, establishing the system parameters (if not yet set up for the other ACAS elements), building the stock item file, adding and deducting stock, and generating reports.

Supplied with the ACAS archive are various scripts to help simplify the set up if running under Linux and you should use them to help speed up this step. It is recommended that you examine these scripts prior to running, making any modifications that may be required. Also included is a script for creating a backup of your data every time you exit the system by the use of the X menu option.

The following assumes that:

A) You will be running within your own directory, i.e. /home/user1
B) Your login name is user1 [Replace 'user1' with your Linux login name]
C) That you are in your home directory using a terminal program in command line mode.
D) You have root access via the sudo or su bash commands. **Caution:** Do not run the ACAS system as ***root*** as that user (and the same applies to using of sudo and su) gives total control over all aspect of the Linux system including deleting ANY files.

6.1. Set up Procedure

You (or IT support) should have installed the Cobol compiler, run the two tests to validate it and then installed the compiler, compiled the ACAS programs as source code, and installed it. For all of these steps, see the manual ACAS - Building the ACAS System.

You now need to login by running a terminal program such as konsole, Qterminal or what ever one you wish to use but make sure it is one that allows you to change the screen and font size setting to 80 columns wide and 25 lines or more down (some enquiry and data entry screens will use more than 43 down if available). Note that Qterminal provides a display showing the screen width and depth while change these values while changing them. You may of course use terminal mode via the key combination Alt/ctl/F1 etc however this will be the default program. (This option may not be available on all Linux systems.) To get back to the GUI (graphic user interface, i.e., KDE or Gnome desktop) use Alt/F7 or F8 again depending on your Linux set up.
(See System settings -> keyboard short cuts.)
Using the later option gives you full screen and standard size fonts. Try both ways and see what's better for you and if they work on your system.

Assuming you or your IT support team set up the ACAS system, they will have run the install scripts in which case the data directories have already been created so the only thing to do is create the directory for the practice sessions. It is possible that if others will be running the live system that common directories will have been created such as at /opt/ACAS where all authorised users will be given access by making them members of the same group , e.g., acas. It is also possible that new user accounts will have been created just for running ACAS, again check with support. However for the practice sessions you would normally just use your own directory as shown in 6.2.1. They may have also copied over the scripts to your working binary/executables and data directories as required.

The use of the set up scripts used during ACAS build and install will create a ACAS directory under your home directory so that all data files will be stored there, unless IT support has modified them to use another location. The default location can be changed for a session by passing a parameter to the main menu programs – in this case stock using the parameter:
ACAS_LEDGER=directory-path, i.e.,

```
ACAS_LEDGER=/home/acas-user-1/ACAS-practice-1
```

Note that the upper case characters is important for ACAS_LEDGER.

6.2. The Practice Session

6.2.1. Preliminary Procedures

So assuming you have now logged into the system, you are ready to begin, so at the prompt, you need to create the extra directory to practice with the ACAS system if not already done, so lets do just that, so on the assumption that the main one ACAS is already set up by the install script, we will set up the one extra directory just for the practice sessions so type in:

mkdir ACAS-practice-1 (For the practice sessions only)
cd ACAS-practice-1 (Change Directory to)
Don't forget to follow each command with return. If you get an error message saying it is created you can ignore it and continue.

Note that every time you run ACAS in a practice session you will need to type cd ACAS-practice-1 before running the system as the system default is to use ACAS and use the command :

```
stock ACAS_LEDGER=/home/acas-user-1/ACAS-practice-1
```

WARNING: If you do not do the above you will be using the main ACAS data directory.

A few more things to do,

It is possible that the ACAS install script has done all this for you providing you have built and installed the system with yourself as user. All scripts used are listed in the manual ACAS - Building the ACAS System.

6.2.2. Starting the Practice Session

Make sure your printer is turned on and connected to your system. Now we can begin so enter 'stock' but without the quotes and then return. If you are using a directory other than the ones set up for normal use such as ACAS-practice-1 as in 6.2.1 then you need to specify a parameter to the program so assuming you are using the directory as shown above and you have moved to that directory then enter
'stock ACAS_LEDGERS=/home/username/ACAS-practice-1'.
The same applies for each of the various ACAS sub-systems i.e., sales, purchase, general, irs etc as *everything* uses the same data directory if only for the parameter file, if using rdbms tables instead of files.

At the start of each of the various subsystems that make up ACAS, i.e. Sales, Purchase, Stock, IRS, General, etc, the system will allow you to change the system date that the system will use by default, but all entry programs allows you to change this in data entry although this date is used on all of the reports. This is in case you need to use a date that is not today's otherwise just leave it as is.

(If this is the first time you have run any of the ACAS programs, the system will creates a basic default parameter file going in to System Set-up option ‘Z’ automatically). You are then presented with the menu.

So for option 'Z' - System Set Up. (see Chapter 10.1 for reproductions of the screen formats and the manual ACAS - Building the ACAS System for full details of setting up the system parameter file.). Here is basic details of doing so, and If this is the first time you have run any of the ACAS programs you start by entering your company name but make sure you have typed it correctly as it cannot be changed without deleting the system file and starting again.

6.2.2.1 ACAS Parameter File Set Up

For detailed information on setting up the parameter file see the manual ACAS - Building the ACAS System which is more up to date with all settings.
If you make an error while keying in any entry to the system the key combinations Ctrl-H or the backspace key backs the cursor up and deletes each character so you can correct the entry. You can also use the back or forward cursor keys to move without changing the data if you wish to insert or retype a character or two.
You are now asked to confirm the name is correct. If not, you are returned to name entry as above.

Again if this is the first time, you are now asked which ACAS programs you will be running. So enter 'Y' for yes or 'N' for no for each of the options followed by return. You **should** select Y for all programs that you will use, whether now or later and 'Y' is the default entry. When using the Sales programs and producing invoices or receipts, select Yes to the invoicing option.

You will now be asked to confirm your selections with a display showing all options that you selected. If you say N (no) then you will be asked again for each of the programs to use as above.

Now you can key in, the company address, accounting period start and end dates in the form of dd/mm/yyyy. You can change the format of the date between UK, International and USA. You can use '.', '-' (period/full stop and hyphen) instead of the '/' and the system will replace them with the forward slash character. Use the tab key or down or up arrow to go from line to line (see chap 15, on page 94 for all of the other ones used).

In the UK the norm for start and end dates is 01/04/2024 and 31/03/2025 (obviously change the year to reflect the current date period).

Next is the number of page lines that are printed in system wide reports but **must** be greater than 28 and if using a inkjet use 48 and a matrix type printer use 66. Then up to three VAT rates where 1 is set to the normal (standard) one for your business with 2 and 3 for any others you will use, note that 3 is usually set to 00.00 for zero rated.
In the UK at time of writing this document, the rates are 20.00, 5.00 and 0.00 respectively. If you are not registered for VAT, leave all three as zero. There is also two local sales tax fields which, for the UK leave as zero but can be used instead of the VAT rates if you are in a country that uses them such as north America.
Note that the VAT rates 1, 2 & 3 are selectable and only one is used for a transaction, in countries that use a Sales tax it is possible that more than one rate is used for all transactions such as Federal tax and local tax and here the best procedure is to use one of them with the total tax included i.e., federal tax is 6% and local is 1% so set the first tax code to 07.00 and have the other two as zero - in case you sell outside the state or country etc or the goods are zero rated.

Entering the tab key will move to the next field, Back tab to the previous one, down arrow to the one below and up arrow to the one above. Enter or the return key (hereafter called 'return') to accept the block of data.

Now for current cycle [normally set to 1], current quarter [normally set to 1 for first quarter], password [to limit changes to system parameters, if not needed set to four spaces] and cycle period (within quarter) i.e., 3 = monthly, 6 = two weekly [not normally used], 13 = weekly. Be careful with these, as they are not checked for validity due to the variations possible. So if you are using it to enter data for the first time in July say but you financial year starts on 1st April you would use, 2 for current cycle, 3 for cycle period (quarterly). Now press return and you will be asked to confirm all data or if you wish, to change anything. This message appears at the end of each screen.

The screen now changes to screen 2 the OPS (Operations) Data. Use the tab key to go between questions and return to finish all questions.

Here you enter 0 or 1 where 1 is normal for Linux, Unix, Solaris, Mac, Windows where more than one user may use the ACAS system, and 0 for Pc-dos, Ms-dos or similar with only one possible user. Next question is to confirm the operating system in use. Now press return and if you selected options 3, 5 or 6 (Mac, Unix or Linux) you will be asked for the Cups or windows spooler name and here, enter the case sensitive name of the printer that you will be using for all reports. You **must** make sure this printer exists within Cups or windows etc, ***before*** doing any printing, otherwise any reports will get lost. Although not used for Stock, use the same name for all three printer options, the last two are for packing notes and invoice printing. You can test this when at the end of parameter set up you re asked if you want to print these details out.

Entering return the system will display your answers, and subject to your confirming these are correct, we move on to the next screen. *Warning: - Check that the operating system question is correctly answered as this will effect the way backups and the spooling of reports is processed*. Likewise, the question of file system usage for which zero is for normal files and 1 for RDB operations such as MySQL or MariaDB.

Now the screen switches to screen 3, G-L (General Ledger) Data.

If you are only going to run the IRS system instead of GL you only need to answer Y to the 'Use IRS instead of GL' question and make sure that the Next Batch number is set to 1 the rest can stay as the system defaults. You should only need to consider using GL if you run a large company with multi branches, etc. IRS will support companies with a turnover of less than 100 millions but see the IRS manual for the current limits. If in doubt select B for Both but the system will create and use another file or table that will just not get used. Once you have made a decision on this requirement you can always reset it to Y or N. Note that when using the Both setting you should have created accounts with the same number of both IRS and GL for the specific accounts used internally in Sales, Purchase, Stock (see Setting up the parameter file discussed earlier).

We suggest you start off with the IRS option on first start up at least until you are used to the other elements of the system as this is easier and quicker to get going as there is a sample company Chart of Accounts that can be used along with default accounts.

Now we have the S-L (Sales Ledger) screen, here the important data is:

- Late Letters and Late Charges (Suggest setting both to 0 to start with) i.e., not used.
- Credit period in days as used by your company, e.g., 28.
- Credit Limit as 500 but enter as 0000500 or use cursor key to move to needed position and enter 5.
- Leave the delimiter as standard unless the '|' is used in your country within addresses in which case pick another such as '!' but make sure its one that is **not** otherwise ever used. Do NOT use \ or / as these have meanings with RDB tables.
- Leave Own Invoice number set to N (ACAS will create them).
- Batch number as zero the default.
- Sales/Stock link to Y.
- The three account questions leave as zero if you do not know what ones will be set up. You **will** need to set these up prior to running live test or live production.

If you hit the escape key at the start of these screens you will just get the defaults or current settings followed by the confirm messages but you will not see what setting are used as some are not printed out.

Next is P-L (Purchase Ledger) data

This is a reduced list of questions but very similar to those of Sales so see the above for recommended responses.

Now on to the Stock data screen, leave debugging set to 0, set Bomp/Wip to 1 only if you are going to use Work in Progress processing or if you get boxes or containers of stock

that has a different bar code printed on the outside to the contents themselves and you will be using bar code readers or other capture devices to record new stock arrivals and the content of the box is all the same stock item.

Set to 1 for Audit Used, Audit Movement, Ave Valuation.
Set Current period to M for monthly and To date period to Y for yearly.
Leave Audit Number and Activity Rep at zero.

For more information on the parameters see the manual Building the ACAS System.

When asked if you want a printed copy, make sure your printer, is on and with paper and answer Y, then hit return to print out the parameters for your records. Enter N and return if you don't require a print out of the parameters but you should do so if only to test the printer set up. For your production system you should also print for audit (for filing) and support purposes. If you did not get a print out, you will have to recheck you used the correct names for the printer spools but you can print it off by using the file prt-1 manually.
If you have not yet set up Sales and Purchase ledgers you will need to do a basic one for both. To set up the default Analysis codes run sales and select menu option L or purchase and option M and once done leave the program to return to the menu and then X to quit followed by rerunning stock.

6.2.2.2 Entering Stock Items

When the system menu returns and using return to accept today's date, select option B, **Stock Item Maintenance**. Then select 1 for **Set-up Stock records**. When the cursor is in the stock number field, enter P-1, for item number P-1. Hit Return. Do the same for the PL Fast key which is also the Abbreviated stock key). Then the cursor moves to the description field. Make entries for the item by filling in the blanks with the information in the table below, hitting tab to advance to the next field if a field is not filled. (Use back tab to back the cursor up one field if necessary).

After making all the entries for the item, press return to accept all data and once more at the action box to save the record, however if the data entered is wrong and you only noticed after hitting return and the cursor is at the action box type 'B' for back and then return, to start again. For the stock number field entries as well as supplier numbers that have lower-case letters (a - z) are converted to upper-case (A – Z) automatically.

For the entry fields Analysis codes just enter 's1' which is set up as a default value on both PL & SL when you run the 'Set Up Analysis codes' functions earlier. When entering the supplier only use the first field which is for the primary supplier and this one is the only one that is listed on reports.

If you have not set up a supplier for a stock item e.g.,, P-1 press function key F3 at any point ***after*** entering the items number ***and*** PL fast key, which will take you into the Supplier Maintenance menu where you can select “Set Up Supplier option” and then enter any missing suppliers as well as print a list of them. On exit from the Supplier menu you will be returned to the stock entry screen to continue entering stock data at the point you left it. Note that when creating a new supplier, it creates a check digit e.g., setting up supplier 000001 will give a check digit of 4 so the full supplier number is 0000014 and this is to be

input into the stock record. You can use A -Z say as the first character of the supplier so for the first entry it could be P00001 where the P indicates it is a PL supplier as against S for SL customers, your choice.

When entering date fields, there are two points to remember, the first is that the date should be entered in the format that you have specified in parameter set up, i.e., UK (dd/mm/yyyy), USA (mm/dd/yyyy) or International (yyyy/mm/dd) [where dd = day from 01 to 31, mm = month from 01 to 12, and yyyy = year as four digits i.e., 2009] and the other point is that instead of using the '/' to separate day and month or month and year you can use period '.' or hyphen '-' as well as right slash in any combination, i.e., 31/03-2009.

Now the screen changes to allow you to begin making entries for the second item. Enter P-2 in the item number field and continue as before. After you've entered information for the last item, hit return (or the escape key) when the cursor is on the stock number field. Enter 9 in the function menu to return to the system menu. You can use the left and right arrows to move within fields and the escape key to quit input if on the first field and in some cases the second (see appendixes for details of key stroke operations). The dates shown below are in UK format, i.e., dd/mm/yyyy so change to match to your format if different.

Item #	Desc.	Stock Room	Reo Pt.	Reo Qty	Retail Price	Inv. Value	Suppl #	Cost/ Unit	Qty Ord	Date Ord	Date Due	B-Ord
P-1	hammer	12	6	18	9.55	60.00	00001	5.00				
P-2	saw	0	5	12	18.99	0.00	00001	10.00	12	01/01/2009	03/01/2009	0
P-4	nails	20	30	100	1.50	20.00	00002	1.00	100	01/07/2009	03-07.2009	0
P-3	tacks	15	10	50	1.25	0.00	00002	0.50				
P-5	tape	12	15	25	1.75	8.00	00015	0.75	25	01/07/2009	03.07.2009	0
P-6	glue	25	10	35	2.00	25.00	00015	1.00				

At the menu select 5 to Display Stock records and here just enter a * in the Stock number field to display all of the stock records. You will notice that a N for Next is shown in the escape box in the right lower corner so having examined the data for each field and making a note of any errors hit return to go the the next stock record. After the last one you will get a message saying that you are at the end so just hit return for the menu,
At the menu, select 6 for, **Print Stock records**. (be sure your printer is ready with paper) and verify that all values for each record is the same as the above table.
If you have errors in the data select option 2 Amend Stock and enter the stock number in error and make any needed changes and save the record and do the same for any other errors in other records. Again print off the stock again so you have an up to date list.
You've now completed the system set up and are ready to begin normal processing. Choose option C for, **Stock Movements**, then 1 for, **Stock Additions Entry**, from the menu.

6.2.2.3 Stock Additions Entry

When the **Stock Additions Entry** screen appears with the cursor in the stock number field (see Chapter 22 for a reproduction of the display format), enter the transaction data in the table below. After entering the stock number press return and the system will display the description. For reference, if the Abbrev (abbreviated) key was not the same as the stock number you could have entered that in the stock key field. You can now enter quantity, price (unit), note that for quantity the ordered value will be displayed and that there is a space on the far right of it, to allow you to enter a space for normal processing or a minus sign '-' for reversing a transaction made in error (but ignore that for this exercise). This allows you to accept the value if the amount delivered is the same as amount ordered or adjust it, if needed.
Press return after each field. After entering the unit price the quantity in stock is displayed before displaying the stock value. If you need to, you can amend this figure otherwise just press return to accept the displayed value and now you will be at the next screen line to begin the next transaction.

After you have entered the last addition to stock, hit Return or escape at the stock number field. Assuming your printer is on, a transaction report will be produced providing a record of your entries. Now select, 4 for **Stock Order Entry** (as you noticed that there is a quantity back ordered value in the table below).

When the entry screen appears with the cursor in the stock number field you can enter the changed data for item P-4, so having entered P-4 and return and the description is displayed e.g. Nails, the cursor is now on quantity ordered which you see is zero but the only value changed is quantity back ordered so just hit return verifying that the two dates are still present, as stock has arrived but 25 short and here you see that the system has the same value for B-Qty (back order quantity) so hit return as no changes needed and return again to leave the function and then 9 to return to the main menu. As your printer is online with paper a short report will appear to confirm that no changes have occurred.

This function is there only if you have to enter order information manually, because you are not using the Purchase Ledger / Stock link as defined in Parameter Set up and you wish to make use of the date, ordered and due fields.

Item #	Qty Added	Unit Cost	Qty Ord	Date Ord	Date Due	Qty B-Ord
P-2	12	10.00		None	None	
P-4	75	1.00		01/07/09	03/07/09	25
P-5	25	1.00		None	None	

Selecting **End of Month Audit Reports** will provide you with reports, both for additions and deductions entered from the **Stock Movement** sub menu, as well as data created via: bar code readers entered here as well as data transferred from the Sales and Purchase Ledgers. When the program asks you if its OK to clear the audit file, respond with 'N' (which is the default option) and return.
When the menu returns, select 2, **Stock Deductions Entry**.

6.2.2.4 Stock Deductions Entry

When the **Stock Deductions** screen appears, enter the data in the table below, hitting the return key after entering each field, again the description will be displayed to confirm you have selected the correct stock item. If you do not have the right item just hit return or escape to re-enter an item number. Now enter the quantity deducted and hit return to begin the next transaction. After entering the last transaction, hit Escape or return to produce a transaction report and go back to the Movement menu. Now enter 9 to return to the main menu. For reference if the Abbrev key was not the same as the stock number you could have entered that in the stock key field.

Item #	Quantity deducted
P-1	2
P-3	6
P-4	30
P-5	10
P-6	16

Print the **Reorder Report** by selecting D, **Reports** then 3. When asked to **Select a Report** Option, key in 3 and return to indicate you want a report on items that are understocked (whose stockroom quantity is lower than the reorder point). First make sure your printer is turned on with paper. The reports menu reappears after the print out is spooled.

Print an **Activity Report** by choosing 2 from the menu. When asked to select the **Activity Report** option, enter 1 to generate a report that covers all items. The report menu returns after the report prints out. Now select 6 for a list by description and when printed enter 9 to return to the system menu and X from there to end the Stock Control System.

The only option you have not played with is the End of Cycle processing however that is only used at the end of period i.e., monthly to clear down the period totals but in this practice session there is next to none anyway.

That's all there is to it, easy.

On the Activity report there is one thing to note, items P-1, P-3 and P-6 show a negative net value for the current month. This is because when the stock items were first entered using **Stock Item Maintenance,** a quantity was also entered and in **Stock Deduction Entry**, quantity values entered were higher than any stock entered in **Stock Addition Entry,** (Normally, i.e., for the production system, Stock item initial loaded should not have stock quantity entered but use the Additions Entry to load all stock item quantities, but of course it is easier to do all in one place, e.g., Stock Item Maintenance) so for the first period (month) the statistics will be in error. However both methods do have their problems but see below for a way around.

If you use (or will use) the bar code function to enter all new stock quantities, you could also use it to record current stock quantities when doing the stock initial load (with zero quantities) and at the same time prior to loading quantities. Yet another reason for doing this quantity load activity over a weekend or bank holiday to ensure no stock movements will occur during this step. Another option is loading Stock in blocks, i.e., location or shelves where stock is held in the warehouse etc.

Regardless of the above two methods and having loaded up all quantities held along with the unit prices and assuming this is all done over a weekend or bank holiday where no sales have occurred then the next steps is to:

1. Produce full stock report and transaction report.
2. Verify figures are all good if not run add or deduct stock programs to correct any errors.
3. If error corrections processed then redo 1.
4. Run end of period Reports within the Stock Movement menu and allow the audit file to be deleted etc.
5. Run End of Cycle processing and clear all, period (e.g., month etc.) and to date (e.g., year).

This will clear all statistics down to zero so that all sales, purchases are recorded correctly allowing the first period (e.g., month or week etc) to have meaningful information. The same will also apply to all of the `To-Date` figures.

During this practice session we have ignored some of the other options in

B **Stock Item Maintenance** (Amend, Delete, Renumber and Display records)**,**
C **Stock Movements** (bar code processing),
D **Reports** (here select all that were not used as no changes to the data files will occur),
E **End of Cycle Processing** and finally
Y **Stock File Compression.**

See later in this manual for a breakdown of the processes and functions for these and the other options.

Fix up during full system testing:

Process Flow chart needed (or is it ??) e.g.:

ACAS Set up

PL Set up
Analysis codes Set up
Supplier file set up and Entry

SL Set up
Analysis codes Set up
Customer file Set up and Entry

Stock
Stock file set up --> print
Stock file additions -- > print
Stock file deductions -- > print
etc

7. Adapting Office Procedure

Adapting your office routine to accommodate computerised stock control is a minor process in most cases. As with any endeavour, careful planning and forethought, smooths the process considerably. This section suggests procedures for setting up, normal operations, using the reports and backing up for safety.

Some businesses also use the stock control system to record their Asset Register and there should be no problems doing so BUT, use a different folder to hold the data files to do so. Here you can (if using the files system instead of RDB), copy over the files :system,dat, analysis.dat, and if using IRS as your general ledger then irsacnts.dat, irsdflt.dat and as a safeguard irsfinal.dat. You must not use the same system files for both as the valuation reports will be wrong as there will be no allowances for depreciation. If using RDB, you will need to create another database and populate the same tables as for the above file names. If using a *nix operating system such as Linux you can use the command "ln -s" to link common data files from the main folder to this such as the system file system.dat.

Another factor to consider is if you have two locations for stock such as your office for all normal processing i.e., the packing department and a warehouse to hold you master stock where new arriving stock goes to. Here it is suggested you copy over from the main data directory to one say called ACAS-warehouse the data files including files named stockctl.dat** to it. Next clear down all stock or adjust the stock levels to match the content of your warehouse and yes, this means a stock take there, prior to this exercise. Now when stock is getting low in the office you obtain the needed stock from the warehouse and record these as Deductions from the warehouse stock then do the same for the main stock system by Adding to stock where you use for both, the Stock Item Movements process.

You should print out for the warehouse, the current stock position using the various menu D options but especially options 2 and 3 to see if you need to order more products depending on the re-order point, time for delivery etc.

7.1. Set-up

From your company records or a physical stock, compile a list of the items you stock. Arrange the items into logical groupings if possible. Besides the normal operational advantages, such an arrangement means the **Activity, Reorder** and **Valuation** reports cover related items when you exercise the report range options.

Assign a stock item number and an abbreviated number to each item, leaving numbers open between logical groupings to allow for adding more items at a later time. You may use your current numbering system, or renumber the list to conform to the system's 13 character stock item number limit and 6 (plus check sum char) for the abbreviated stock number. The 13 character limit allows you to use the standard bar code number as the full stock number and the abbreviated one to be used by stock control and Sales & Purchase ledgers.

If you obtain stock items boxed in say 48 units to a box and the box has a different bar code to that of the individual items (this is the normal situation) then you can make use of the work in progress function (that is initially set up in the parameter file) to bundle the box code to 48 items linked to the separate stock item. This process is part of WIP (Work In Progress) where many stock items can make up another (value added) item.

When not using bar codes (13 char numeric), stock Item numbers may contain the characters A through Z (a - z are converted to upper case, i.e., A - Z), the numbers 0 through 9 and dashes (-). Be sure the dashes line up. For example, the dashes in the following item numbers are aligned properly:

A180-005-6
A180-005-7
A180-016-5

To enter the number A180-5-6 instead of A180-005-6 would be improper. In the examples above, the first character of the item number (A) gives the warehouse location. The next character (1) the department number, the next two (80) give the dissection, the three characters following the dash (005 and 016) are a product code, and the final number is a size code. [Also note that a field exists, for each stock item that will hold a 10 character storage location]. Very useful if you have a large stock room or warehouse as it will same time for the packers finding and packing up orders when using the SL invoicing system.

After compiling the complete list of stock items and assigning them numbers, make an accurate determination of the quantity on hand and value for each, either by physical stock or company records. Don't forget you can use bar code readers to assist in capturing item numbers and the quantity held/on hand, see more detail at end of this section.

In addition, you should have retail price, cost per unit, reorder point, and standard reorder quantity information for each item. For items currently on order you should also have as much information on: the date ordered, date due, quantity ordered, and, if applicable, quantity back ordered, as you can. The dates are informative only and so are not essential.

You may assign up to three supplier numbers for each item. The system is set up to use

the 7 digit supplier number used in Purchase Ledger. If you buy the same item through more than three suppliers, you can establish a separate record[1] for each additional block of three differing suppliers, or leave the supplier numbers blank. Another option if you are using the WIP option is to create a separate record as above, but have the construction item set to the main stock item number with the construction bundle set to 1. If you have set the Purchase ledger / stock link, then when entering supplier numbers they will be validated against PL to confirm they exist.

This way, if stock arrives for the separate record the system will see that WIP is on and then check for values in construction item and bundle and transfer the value in bundle multiplied by the quantity to the constructed record, easy.

This is the same procedure for boxes that hold multiples of the primary item that has a different bar code between the box and the individual items. This way if say, 6 boxes of 24 tins of baked beans comes into the warehouse with a bar code of say, 1 100100 000101, but where the individual item 'Tin of Baked beans 300gm' have say, 1 200100 001103, then the two can be linked together so when these 6 units arrive (6×24) 6 will go through the Additions Entry program (or bar code Entry) and the system will transfer the bundled value (24) times the quantity of boxes (6) and add 144 (6×24) to the quantity of baked beans 300gm stock item and then clear down the 6 quantity of boxes but still record the count for the statistics at the same time recording the addition and deduction of same which was in fact transferred to the other item (separate tins). In the instance of boxes that only hold the same bar code of individual items you can substitute the first digit with say '1' and use that number for the WIP item. In the instance of boxes that do not contain any bar coding and you receive similar often you can make up a bar code book for each such product in a suitable order to use for the same purpose. This method is useful if you use bar code scanners or as an alternative is to product a sheet of labels that can be placed on each such box.

The WIP mechanism can also be used if your business build products based on multiple elements of other stock items to make products for example, you produce a circuit board and consists of capacitors, resistors, IC's, (integrated circuits) the specific circuit board, connectors etc., and all of these of various sizes and specifications. So the produced circuit board is entered into the SC as a finished product but is linked to the various individual components that make it up also held in SC as individual items where you also record how many of each item that circuit board needs. This way you can see very quickly that if you have a need to say make 60 boards if you have current stock to build them and if not if the extra requirements are on order and their estimated delivery dates and once made add them as completed products into SC much of which semi automatically.

Like wise you are in the take away meal business, and produce say a meal that consists of various elements such as 20gm peas, 25 gm carrots, 50 gm potatoes, 60 gm roast beef, etc., and you stock these elements by portion and size you can tell if you have enough stock to create a given number of meals and once completed, transfer to stock the needed number of meals ready to go out with a reduction in the elements that made up each meal.

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1. Note that although SC (Stock control) will validate supplier numbers against PL on first data entry, i.e., stock record load or amend they are not used by the system other than for reports or displayed on screen at this time but do help to provide information to the purchase department using under-stock reports, etc, as to when to place a manual re-order.

Yes, I know silly examples, but hopefully it gets the principal over for you.

Got it?

If not re-read the above and also see later on in this manual for further information on these procedures.
For most businesses the normal method is using packing notes received within the delivery, that is first checked against actual items received, and a note made if different from the packing note which is then used as input to sl020.

These days you can use a dedicated bar-code reader at modest cost. or a mobile phone with the appropriate app that can be used, where the phone can accept quantities as well as other information and this data passed to program sl020 with needed changes made to the Cobol code to match up with the way the data will be passed.

If your bar code reader device, supports adding volumes per bar-code, a change will be needed in the source code for program sl020.cbl in paragraph -

da000-Process-Barcode-Additions.

Specifically in paragraphs da010-Accept-Data1 and/or da020-Accept-Qty.

What is needed does depend on what the reader passes to the sl020 program and in what order, i.e., it could be one of two possible processes :
1. Data is sent as bar-code and then quantity then CR (carriage return) or possibly the other way around.
2 Data is sent one at a time as bar-code CR, then quantity CR - this option is the easiest to change the code for, as it is more or less the same as currently programmed, for but still requires the odd change.

At Applewood Computers, bar code reading has been tested with the one code reader used here, which is a device that reads and stores one bar-code where the code ends with a CR (Carriage Return) character and the reader plugged in to the PC via a USB cable running program sl020. This testing was limited in nature as only the fact that the data is passed back to the program was confirmed and could be used. The code reader had very limited program changes made, i.e., to send CR after each bar-code.

The following is taken from sl020.cbl at da000-Process-Barcode-Additions section.

The device used is a Wasp WASP WLR8900 CCD LR (long range) USB scanner available from Wasp Technologies Inc which is available in the UK and Europe and other countries. See the manual for it, for additional information and look at the above code segment for more details. Note that the way a code reader passes the data read and quantities entered can vary so it is difficult to program in advance all the possible differences.

Other possibilities, are using a mobile device such as a mobile phone with the appropriate application installed to read the bar-codes, accepting quantities as a block of data and then feed in to sl020 for all new stock for the time period, i.e., afternoon etc.

If you need help on this and do not have the capability to do this yourselves contact us,

see the information given in the program sl020.cbl.

[Note to manual writer: reread this to check for clarity, add flow type chart to help, etc.]

TESTERS:
[Functional tester and system testers validate manual matches software operations here to the letter if not refer for manual and/or s/w changes as appropriate].

Watch out for software function upgrades that do not match up with the manuals and revise or produce a software abnormality report.

7.2. Normal Operation

Under normal circumstances, additions to stock can be keyed directly into the system when they arrive, or batched for later processing. You can take the information from packing slips, invoices, and other original media, prepare a form of your own or via bar code scanners or readers, etc. If used packing slips and invoices they can then be routed through your operation normally. If you choose to retain the default audit option, the batch processing method (saving up additions or deductions for entry all at once) helps ensure the accuracy of your transaction proof reports (see Chapter 12) but the system may not always reflect the true stock position at all times. However it needs to be pointed out that batching incoming stock means that at various times of the day the current stock position on computer will not match up to the stock in the warehouse or stock room and this will impact the ACAS invoicing system as well as any e-commerce systems e.g., online shop facilities as the stock control system could be showing nil stock which is not the case. In these cases it would be wise to process such additions as soon as possible after being delivered maybe by using the person responsible for good inwards to directly enter new arriving stock into SC as they arrive.

You can handle deductions from stock similarly. Enter the deductions when they occur, or batch them for later entry. You can take the information directly from customer orders, pull-sheets, or forms designed especially for the task. Again a similar situation could arise as in additions to stock. If you are using a online invoicing system such as E-Shop etc., or the ACAS sales ledger invoicing system these should be set to reduce stock in real time so that any future sales will see the current position at all times reducing the need for any manual intervention. You can use the Sales Ledger invoicing system to generate receipts for a order that will reduce down from the stock quantities for all ordered items so you can set up one sales ledger account as a "Cash Sale" to minimise extra work flow for each order - just depends on the way you work.

Reorder or backorder information can be entered directly from your purchase order books, buy sheets, or other media.

If you also use the Purchase and/or Sales Ledgers and allow them to be linked to Stock Control (via the system parameter file) they will pass new sales transactions containing the abbreviated stock items to stock control which will deduct the appropriate amount as if using the deduct from stock function and if using Purchase Ledger to record orders, the same applies to orders, i.e., order quantity, order date, date due (expected).

Using this method as well as using bar code readers etc., for newly arrived stock, the manual intervention within Stock Control can be kept to a minimum.

7.3. Using the Reports

The reports generated by the Stock Control system provide management, accounting, and stockroom personnel with up-to-date and accurate information on availability, turnover, order status, stock value, as well as retail and replacement costs.

The system's default audit feature will, after adding to stock or deducting from stock

generate a **Transaction Proof** report as a check on your entries for that session of data entry. This occurs on all records for both functions before leaving the program.

At the end of a day, week or month you also produce a full **Transaction Proof** report that details both additions and deductions as separate reports. Failure to produce the period reports, tends to annoy your company auditors when they come in at the end of the financial year as they would expect such reports to exist and for them to manually go through all of your purchase invoices to prove your stock and PL will significantly add to their costs and your bill for the audit.

To recap, this method gives you one report each, for additions and deductions made at the time of each run of the Addition Entry and Deduction Entry functions, as well as a period (monthly or weekly as set up in the parameter file) report after which the file, should be cleared down after confirming the output of the report from the printer and if needed making more than one report copy for audit filing purposes as well as your department, subject to your company policies.

Please note that these functions of proofing additions and deductions do not show stock movement caused by the direct linking of sales invoicing or purchase ledger although they can be asked to do so.

The Stock Control System will provide the reports listed below at any time:

1. **Stock Item List**: A multi-purpose listing of all stock items for use by management, buyers, counter personnel, sales teams and stockroom personnel.
2. **Activity Report**: most useful for the company buyers, sales and marketing staff and department heads.
3. **Activity History Report:** Distribution as above.
4. **Stock Valuation Report**: Useful information for the company accountants, controller, or other management.. A real time saver at audit times.
5. **Re-Order Report**: A real help to your buyers, and up to date information on availability for counter personnel, sales people and the purchase department.
6. **Stock Report by description:** Full report of all stock by descriptions.
7. **Stock Report by location:** A full or with a selected start and end location to be reported on and/or where a new page is created on a change of the first selected number of characters that make up the location.

These reports can be produced with a variety of search options and criteria (excluding option 6).

7.4. Backing up for Safety

A back up script is provided for *Unix based systems which includes Linux, Solaris, Aix, Mac OSX etc., so that all data files used by the system are backed up when exiting (or leaving) the ACAS system or any of the ACAS sub-systems, i.e., Stock, Sales, Purchase, IRS.

As supplied, this script creates a tarbel (an archived file similar to zip under Windows) produced by the program tar where the file name includes the date and time that the backup was run. This helps in identifying specific backups. It is recommended to maintain a system diary that gives some detail of your activities on the system prior to the backup as well as noting the backup file name on copies of the primary reports such as the transaction proof reports.

These scripts must be validated during pre-production testing to ensure that they do what you the user requires, and that a data restore works and that ACAS works correctly, i.e., all data files are present. See the appendixes for more information.

For Windows or OS/2 users you will need to build your own batch or command file to suit your company set ups.

A full printout of the **Stock Item List** containing all items also provides a margin of safety. Should your hardware be out of operation for an extended period, or your files destroyed, this hard copy backup enables you to track the changes in stock manually until the problem is taken care of but it is recommended that the system is available on more than one computer in a set up allowing the data files to be shared if needed even via the back ups that are made each day. The back up scripts should also copy the created archive file to another computer system that will be used in the event of a hardware failure so that the back up system can be brought into play quickly. This back up system could on receiving the archive should extract the data files and store them directly where they will be used if needed. The same applies if you are using the RDB system in place of data files, in that a system must be available and in normal operation that acts as a parallel system under the control of MySQL or mariadb when set up as a parallel system so that all changes, additions to the database tables occurs in real time and of course these should also have back ups made on a regular basis such as hourly or longer depending in your needs. This is on the assumption that both computers acting as database servers are connected via a network Lan cable at the maximum speed for your network such as 100Mb or 1 Gb.

You do, have a procedure in place to back up all of your business data don't you?

If not, now is a good time to get one in operation. The success of your company could depend on this being in place **NOW**.

Remember there are two kinds of computer user, one that has lost data without a back up in place and one that **will** loss data, regardless of reason e.g., hard drive failure, power cut, liquid fails on system case, etc. Remember a back up can be done in minutes to a USB memory stick (or an external hard drive) or another computer in the network, with one for each day of the working week as well as another set from the previous week. Ten memory sticks is not a large investment by any stretch of the imagination, but don't forget

to replace them at the beginning of each year as a safety precaution. Also for *Unix or Mac based systems a script running tar or rsync, costs nothing as its all included in the operating system. Note that the supplied script makes the back up to another directory under ACAS and you may well want to change it to copy the file created to another location such as an external hard drive, another computer or a USB as indicated above.

A company wide back up strategy may be in place already, check for it !

Ask your IT support department to help, that is after all, what they are there for.

8. Reference Section

8.1. Operational Background

8.1.1. Hardware and Software Requirements

The Applewood Computers Stock Control System will run on any computer under the control of a *Unix based system such as Linux, Unix, Sun Solaris, IBM Aix, Apple OSX (or later) compatible O/S (operating system) as well as Windows, OS/2 and even a IBM mainframe running os390 or zOS in the unix environment. Your computer system must have the following minimum hardware and software components:

1. 1Gb (Gigabyte) of RAM (Random Access Memory) in addition to the O/S (Operating System) requirements.

2. One hard drive with free space of 100mb for the ACAS data files, backups and 200Mb for the ACAS source code and Cobol compiler, but never run with less than 20% free space on the hard drive or partition. It is recommended to have at least 1GB or 10% free disk space what ever is the larger. For a mainframe, some what more is needed.

3. A laser, inkjet or matrix type printer that takes A4 paper (UK/Europe) or letter (USA) that utilises the Cups or OS printing facility, which most Linux distributions have installed to service your printers. The spool name of the printer as set up in Cups or windows is needed to be supplied to the system set up process when creating the parameter file.

4. System software including an operating system and the GC (GnuCOBOL) compiler with all dependences (all GC needed additional development software). See the readme files and the file DEPENDANCIES in GC for more information. A copy of the current readme file as supplied with GC v3 is supplied in the manual Building the ACAS System. Of course you can use other Cobol compilers including Micro Focus Visual Cobol or Net Express and both are available at time of writing as personal editions but have limitations on usage such as program size and this is a major issue with ACAS as the programs are larger.
There are many other Cobol compilers out there but many are expensive to obtain, ie over 4 - 6,000 for each computer.

Most modern PC's will meet and exceed these requirements and for those older systems, they can be expanded or adapted to meet these requirements. Your local dealer or IT support department can give you specific information about the hardware currently available.

To build a system that will run ACAS in server mode you can always use a pre-used computer that has been reconfigured to do the job and the above specification is the bare minimum along with a multi core CPU with a recommendation of 4 core at a minimum but only a mid-range one is more than ample to handle and support 10 or more users providing the operating system is Linux or an other *nix system.

This topic is covered in more detail in the manual ACAS – Building the ACAS System.

8.1.2. The Cobol Programming Language

The programs and modules which make up ACAS including Stock Control, Sales, Purchase, & General Ledgers as well as IRS, are written in the COBOL programming language utilising the (free) open source) GnuCOBOL compiler. This compiler converts the Cobol source to C code, then runs the free Gcc C compiler to produce the executable programs and all this happens automatically within the Cobol compiler, having used the supplied script to compile all of the elements of the ACAS system.

Why this compiler?

1. It is used by many companies around the world.
2. It is free to obtain and use, including the free run time license.
3. It is available on a very wide range of systems.
4. It is reasonably easy to install.
5. It uses modern elements of Cobol as well as some of the older so it can compile source code dating from the 1970s to code created today and beyond.
6. Well supported by the developers with fast turnaround of bug fixes if needed.
7. It is free to use on any number of computers including IBM mainframes providing they run Linux or other *nix systems.
8. Versions of GC are also available for Windows, OS/2, Mac OS/X and even Andriod. If needed, go to the GnuCOBOL support website for information on such at: http://sourceforge.net/projects/gnucobol

This system will also compile using the Micro Focus Cobol compilers and others, but some program changes will be needed subject to what Cobol version you are running. You will however need to buy a run time license for each computer you will run ACAS on.
However this does **not** apply to GnuCOBOL.

Applewood Computers distributes its programs in source form so that you can modify the code to your own requirements should you need to. If, in the event you would like to change some functionality, but do not have the expertise or staff to do so, you can contact Applewood Computers to do the required work for you. However, where ever possible we prefer to add these changes into the open source version in order to keep source code maintenance as simple as possible but we do understand that in some cases this can not be done.
Therefore you will be running a unique source code set up, just for you.

See inside the front page of this manual for contact information.

As stated elsewhere in this manual the system will support access to a SQL database such as Mysql, Mariadb etc, and the user is responsible to install such, prior to the use of it with ACAS along with back up and parallel processes (if required) in place or set up.

This is available from the v3.02 release. For most if not all of these database packages a free community version is available to use, free of charge if you do not require a support contract from them, but see the licensing terms for more information for each product.

8.2. ACAS System Parameters

This is a very abbreviated or condensed description where it is detailed in full in the manual ACAS - Building the ACAS System and this manual should have been read and actioned before any other manual.

Parameters can be defined as constant elements or factors within which actions or choices are constrained. Because not all users have the same needs, you can adapt the Stock Control system as with all the other elements of ACAS to your requirements by changing parameter values, rather than by expensive and complex reprogramming.

The Stock Control system parameters divide into two general and one specific type per system:

1. General Parameters.
2. Audit Parameters.
3. Sub system Parameters for each e.g., IRS, General, Sales, Purchase, Stock etc.

The General Parameters control such things as the company name and address, date format (whether UK, USA or International), lines to print per page. Other parameters classified as general parameters determine what time periods (week, month, quarter) are used for accumulating current period stock activity statistics, and what time period (month, quarter, year) for accumulating to-date activity statistics. The average valuation parameter lets you decide whether you do or do not want the system to calculate the value of your stock by the weighted average method and print **Valuation Reports**.

The Audit Parameters let you determine whether you want to keep a hard copy record of your addition and deduction entries to the system as a way to trace accounting or stock errors, and check the accuracy of your entries. *Note that this option is set on by default.*

Sub System parameters take you through each system in ACAS so you can set all variables to your company requirements.

When you implement the Stock Control System or any sub system in ACAS for the first time, you move directly to the parameter entry screens where you can examine the default parameter values and change them as needed. You can re-enter this function at any time using option Z on the main menu in any of the ACAS sub systems.

8.3. Building the Stock Item File

The Stock Item file is the master record of all items in your stock. Each item takes up one record on the file. Each record contains the abbreviated stock item number (which can be referred to in Sales and Purchase ledgers as well as Invoicing and Order Entry), full stock (bar code) number, the item description, cost and retail price, the quantity held in stock, reorder information, up to three suppliers numbers, and information on the items activity for the period as well as the to date figures. In addition, and subject to the parameter file settings, can also hold information about WIP (Work In Progress) and if applicable, bundling data such as linked (combined) item and quantity per bundle. See chapter 7.1 for more information on WIP and note that BOMP is treated exactly the same way unless indicated otherwise.

Building the stock item file is the final step in system set up. If no valid records exist on the file, as is the case when you first install your Stock Control System, the system goes immediately into the adding mode when you choose the **Stock Item Maintenance** program from the menu. Once valid items exist on the file, selecting **Set-up Stock records** is needed to add additional records to the file.

To add items to the file, choose the **Stock Item Maintenance** menu from the system menu then option 1, **Set-up Stock records**. When the item entry screen (see Chapter 22) appears, you can begin adding. You start by entering the stock item (bar code) number followed by the abbreviated number and this is the number that is used in Sales invoicing and Purchase ledger. You now enter a description of the item (for example, "Sport shirts, Lg.") and the current stockroom quantity. Enter the reorder point, reorder quantity, up to three suppliers numbers as set up in Purchase Ledger (or leave blank), cost per unit (usually the last price paid) or the average purchase price, the stock value but if left as zero the program will calculate this based on cost price and stock quantity, the quantity on order, the date ordered, the date due in, and the quantity back ordered (if any) as well as a pre sales figure if orders have been taken on an out of stock item.

For stock items that have a pre-order value of non zero the invoicing and packing list reporting programs should be watching for such stock items and produce a picking/pack list schedule for any that new stock has arrived so that they may be dispatched prior to processing any new orders.

[***In addition,*** *the analysis codes as lower case letters for Sales and Purchase Ledgers (as set up in these ledgers are used* ***and*** *these systems* ***must*** *have been set up, prior to running stock control - at least the program sl070, that will set this file up and this is run if not previously done and all default codes are created before retuning back to stock control.*

After making these entries you can move the cursor from field to field indefinitely by tab or the arrow keys and having completed entering the item data, finish by hitting return, and again or, press S to save or B (back) to start over, or Q to quit entry (in each case followed by return) also hitting Escape or blank on the stock or abbreviated stock number will also quit data entry.

The Item Entry function is primarily for building the stock item file, but can also be used to

display, print report, amend, renumber or delete items from the file.

You may also use the Item Entry function to amend or change the reorder information, item description, and supplier numbers. If, however, the stockroom quantity is altered through this function, the stock activity report will not reflect this change, and will thus be inaccurate until you run the End of Cycle process.

Assuming the defaulted audit option is set, you should not alter the stock value through this program and just leave it as zeros since it would not be reflected in the transaction proofs.

8.4. Adding and Deducting Stock

8.4.1. Manual Method

Once your system is set up and the stock item file built, additions to and deductions from stock are handled by the **Stock Additions** and **Stock Deductions** menu functions. When you select the **Stock Additions** or **Stock Deductions** functions from the system menu the **Additions** or **deductions** screens appear with the cursor in the ***Stock Number*** field (see Chapter 22 for reproductions of the screen formats). You may then call up the appropriate record by entering the stock item number. As this data can also be input via a bar code reader or scanner it is the full 13 character number that is presented.

When the record description appears on the **Stock Additions** screen you can enter the number of units received and their cost, and update the order information. The program automatically adds to the stockroom quantity for the item, subtracting like amounts from the quantity ordered and back ordered figures (the quantity back-ordered is treated as a subset of the quantity on order). If you've chosen the default average valuation feature the program also increases the stock value by the amount derived from multiplying the number of units times the unit cost. It also adds the number of units to the current period and to-date period activity counts for the item which are the basis of the **Activity Report**. The transaction is recorded in the audit file.

When items leave your stock, you use the **Stock Deduction** function to enter the change. Access to records works the same as for Stock Additions including being recorded in the audit file.

When the record description appears, you enter the number of units leaving your stock. The **Stock Deductions** function decreases the stockroom quantity and adds to, the current period and the to-date period activity counters.

If the default average valuation is set, the **Stock Deduction** function also decreases the stock value for the item based on the weighted average value of the item. For example, if 5 units were added at 10 each, 5 units at 12 each, and 10 units at 20 each the weighted average is figured as follows:

```
 5 @  10 =   50
 5 @  12 =   60
10 @  20 =  200
----          -----
20            310
```

Weighted average = 310/20 = 15.50 per unit

Should a deduction from stock occur now, the stock value for the item would decrease at the rate of 5.50 per unit. The weighted average is recomputed each time new items are added to stock. Please note that although the UK pound sterling symbol is shown here to represent a monetary value, no symbols are used during displays or any printed reports. This way, the system will work regardless of your currency, without source code changes being needed. There is one report program (Statements) where this needs to be changed

for your currently if not sterling. See the source code file sl190.cbl in the sales directory.

The transaction is recorded in the audit file. The transaction proof is a hard copy record of your addition and deduction entries and their effect on the stock value. You generate the transaction proof by choosing the **Transaction Proof** function from the Stock Movement menu. With the audit option, batching transactions (grouping them for entry all at once) is best, although you could move back and forth from addition to deductions. See Chapter 8.5 for more information on the audit option and transaction proofs.

Additions and deductions should only be made through the addition and deduction functions, not through the **Stock Item Set-up or Amend** functions. This keeps the activity counts accurate, and records the transactions in the audit file in a form acceptable to company auditors as well as the Inland Revenue Inspectors (UK tax collectors). [Yes, every country has them regardless of the name used by that organisation.]

If the number of units added to stock is too large, you must correct the mistake by making a negative stock addition in the amount of the error, not by making an offsetting deduction. Similarly, if the amount deducted is too large, you must "back out" of the error by making a negative deduction, not an offsetting addition. This makes sure the activity counts do not reflect additions and deductions that did not actually take place.

If you have chosen to track the value of your stock by the default average stock valuation facility, the amount subtracted from the stock value (when backing out an addition to stock error), or the amount added (when backing out a deduction error) could differ from the original amount if the average value for the item has changed. This will increases the chance that you will catch the error on the **Transaction Proof** before the average value of the item is altered by an intervening addition at a different cost per unit. The average unit value is recorded on file to four decimal places, i.e., a hundredth of a penny/cent etc., to help maintain maximum accuracy.

8.4.2. Automatic Method

If you use the Invoicing / Stock control links in SL (Sales Ledger), then all created invoices will subtract stock and optionally add a deduction record to the audit file but indicating it came from invoicing. The ability of creating this audit record or not, is enabled in the invoicing set up program. For more information see the Invoicing section in the Sales Ledger manual.

If you use PL (Purchase Ledger) to place orders to suppliers then the Stock Control system will receive details of deliveries by stock items into the system subject to parameter settings. Note this is turned off by default as for most companies they need PL for work for all such orders for which many will not be in the Stock Control system such as furniture, stationery, vehicles and other day to day items required for the running of a business.

For more informations see the SL and PL manuals respectively.

8.5. Audit and Transaction Proofs

The audit option of the Stock Control System allows the user to maintain a hard copy stock transaction history. In addition to its use in documenting sound financial and managerial practice, this hard copy trail facilitates error tracing and recovery. It provides an ongoing check on the accuracy of your stock control system, making your automated stock and your physical stock match as closely as possible.

The hard copy printout is called a **Transaction Proof**. The **Transaction Proof** shows the item added or deducted, the quantity, the unit cost, and the change in stock value brought about by the transaction. It also shows addition or deduction errors that were backed out as cancelled transactions. This report is produced under two circumstances namely after processing any block of contiguous transactions of either type (additions or deductions) and a separate run of the **End of Month Audit Reports** that is run from the Stock Movement menu.

When you use the default audit option (as set up in the system parameter file via main menu option **System Set up**) it is applied to all addition and deduction transactions via the relevant function (i.e., Stock Additions and Stock Deductions Entry) as well as Stock Additions from Bar Code readers.

Each time an audit file is proofed using the end of period audit reports function, the proof number for that batch increases by one for the next period providing you answer Y to the question 'Can I Delete the Audit File Now?' but you ***must*** verify that the report has been printed before responding, as a warning message will remind you. This process will clear down the audit file removing all records so that you can start a new period. This report will contain all the transactions entered during the period (usually a month but user adjustable and set up from the system parameter file) as separate reports for both additions and deductions entered from the functions in the Stock Movement menu, from bar code readers and from the Purchase Ledger if used along with the Sales Ledger Invoicing system also, if used. It is recommended to use fully, the Invoicing system linked to Stock Control as this will greatly reduce the requirement to run the Stock Deductions entry program other than for finding errors in the system against actual stock counts due to inaccurate delivery counts or pilfering.

8.6. Adding, Deleting, and Changing Stock Items

As you add new items to your stock and remove others no longer carried, you'll want to add or delete stock item file records. Your may also want to alter the reorder point, reorder quantity, retail price, supplier numbers, cost per unit, or update order dates and quantities for an item. These additions, deletions, and changes are made through the various functions accessed from the main menu option **Stock Item Maintenanc**e.

8.6.1. Set-up Stock Records

To add a new item you select the **Set-up Stock records** function from the menu. Enter the stock item number and then all the information for the item.

When you first build the stock file, you might want to leave certain abbreviated stock numbers unused so new items of the same logical type will be placed on the file at appropriate points. Doing so, will mean that when you choose the option of reporting on a range of items, the range will include related items. The same can apply to the full (13 character) stock number used as a bar code or a user defined number. Use the return key in order the accept the abbreviated and full stock numbers, Tab key as well as the arrow keys to move between the other fields as well as backspace and Ctrl-H (back one character with delete) and back tab for the previous field and return to accept the data and return again at the action box which is already pre-set to 'S' for save. You can change this if you wish to quit or go back to beginning of data entry. The cursor will return to the start of a cleared area to enter another record. If you wish to terminate the entry you can use the escape key when in either the abbreviated or full item numbers or space and return on the first field. For both Stock number and abbreviated stock number any entered vlues are converted to upper case letters if letters are used. PA codes are converted to lower case.

8.6.2. Delete Stock Records

To delete an item no longer carried in stock, you select the **Delete Stock records** function from the S**tock Maintenance** menu, bring up the record by entering a stock number with return, and select the 'D' for delete action within the action box that sits in the lower right corner of the screen and hit return. You can no longer access or report on the record at this point and the record is **not** recoverable. There is also no audit trail showing the record deletion**.** If you change your mind in deleting the record, replace the action box 'D' to one of the other options as required.

This action box facility is used on various other screens and functions.

Warning: If the item contains non zero values for stock held, on-order or back-ordered then you will get an error message and the system will not delete the item until you have cleared down all the values. This is to prevent you removing an item for which you have physical stock in the stockroom or is due to arrive or existing back orders placed.

Use the **Stock Deductions** function for non-zero values in stock held and the **Amend Stock** function for the others.

8.6.3. Amend Stock Records

To change an item on the file, select the **Amend Stock records** function from the menu, bring up the record and change the desired fields using the same methods and keys as available in the set-up function (see chapter 8.6.1). If you have maintained the default audit option, never change the stockroom quantity field through this function; use the **Stock Additions** or **Stock Deductions** functions via the **Stock Movement** menu. If you've chosen to use the average valuation feature, make no changes to the stock value field; it adjusts automatically whenever stock is added or deducted.

8.6.4. Renumber Stock Records

To renumber the full and abbreviated stock numbers in an existing record use this function. It will request both numbers, check that both exist and that the quantity on order is zero as well as the quantity back ordered is zero, it will then request the new numbers and check that neither exist and if correct will then renumber the record. Note that the quantities are tested prior to a renumber is in case a stock delivery comes in with the old stock number.

Although this is not bullet proof, it should help to minimise problems but remember that the audit file will still reflect the old stock numbers for additions and deductions in the **End of period Audit Reports** and that there is no audit trail showing the renumber or for that matter a stock record deletion**.**

8.6.5. Display Stock Records

To display a record. Enter stock numbers and the record is displayed. To end the record display hit return and return at the action box where the function will ask for a new record number. If finished, hit escape or return.

8.6.6. Print Stock Records

This function will print all records on the stock file. If you need a selected block of stock records to print, use the **Reports** menu from the main menu.

8.7. Producing the Reports

8.7.1. Types of Reports

You can order any of the five reports produced by the Stock Control System at any time by choosing them from the menu option D, **Reports**. You can order a;
Stock Item, Reorder, **Stock Activity, Stock History** or a **Stock Valuation Report**.

Using the **Stock Item Report** you can print the entire list, or only a selected range of items. The report shows the abbreviated stock number, bar code number, item description, supplier numbers, retail price, stock value, cost per unit, number in stock, reorder point, reorder quantity, date ordered, and quantity back-ordered.
If the WIP flag is set on the system parameter file and the stock item has WIP information, various additionally related fields are also printed out. In addition, this report ends with the total number of records on file.

Using the **Reorder Report** you can report on items whose stockroom quantity has fallen below the reorder point, on items out of stock completely, or on items currently on order. For each of these reorder report options you can order a report on all, or only on a range of items.

You can order an **Activity Report** on all items, on items active in the current period (week, month, or quarter), or on items active during the month, quarter, or year-to-date period. For each activity report option you can choose to report on all, or only a selected range of items. At the end of the current period (week, month, or quarter), or at the end of the to-date period (month, quarter, or year) you must reset the activity counts to zero. To do this you run the **End of Cycle Processing** function from the main menu.

Using the **Stock History Report** you can produce a listing of all or a range of stock numbers (bar code or abbreviated) showing net (additions less deductions) transactions over the entire year, month by month as well as the current month. At the end, the report also shows a total number of all records on file and a caution message if there are WIP records on file but none with any WIP data.

The **Stock Valuation Report** is available whether or not you have chosen to use the average valuation facility. However, if you do not choose average valuation, the report will be meaningful only if you manually compute the changes in stock value and enter them through the **Amend Stock records** function. You can order the report on all file items, or only a selected range. In addition to giving the stock value by item, the report also prints a total value for all items.

The **Location Report** will provide a report that you can select the start and end locations to be reported on as well as a page break between primary location codes. In this way the report can be separated and distributed between different office, or warehouse areas.

Representative report samples appear on the following pages but the program version numbers may be from a different build number.

THESE REPORTS NEEDS TO BE UPDATED TO COVER LOCATION REPORTING.

8.7.2. Sample Reports

```
ST010 (3.02.48)                                          Stock File Report                                                    Page   1
Applewood Computers                                                                                                      02/07/2020 19:05

<------ Stock ------> Supplier  Location     Unit      Unit        Value    Number <- ReOrder -> <------- Date ------>  Quantity On
Abrev   Number         Number               Price      Cost        in Stk   in Stk  Point    Qty   Ordered     Due      Order  B/Ord

1800015 A180-001-5    PA18882 A1-01          200.00    100.00     15,000.00    150     25    100                             0      0
     Description: Suits, wool knot, short              SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800016 A180-001-6    PA18882                210.00    105.00     21,000.00    200     50    250                             0      0
     Description: Suits, wool knit, regular            SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800017 A180-001-7    PA18882 A2             210.00    105.00      7,350.00     70     25    100                             0      0
     Description: Suits, wool knit, long               SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800018 A180-001-8    PA18882 A2             220.00    110.00      2,750.00     25     10     40                             0      0
     Description: Suits, wool knit, X-Long             SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800025 A180-002-5    PA18882 A3             225.00    110.00      2,200.00     20     25     50 25/06/2020 03/07/2020     50      0
     Description: Suits, wool knit, vested, sht        SA Code: b3  PA Code: b1
-------------------------------------------------------------------------------------------------------------------------------------
1800026 A180-002-6    PA18882 A3             230.00    115.00     11,500.00    100     30    150 01/06/2020 01/07/2020     15     15
     Description: Suits, wool knit, vested, reg.       SA Code: a2  PA Code: a2
-------------------------------------------------------------------------------------------------------------------------------------
1800027 A180-002-7    PA18882 A3             240.00    120.00      3,000.00     25     30     50 01/06/2020 02/07/2020     50     50
     Description: Suits, wool knit, vested, long       SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800028 A180-002-8    PA18882 A1-01          250.00    125.00      1,250.00     10     15     30 02/06/2020 01/07/2020     30      0
     Description: Suits, wool knit, vested, X-lg       SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800056 A180-005-6    PA18882 A1             175.00    100.00     20,000.00    200     50    150                             0      0
     Description: Suits, Gabardine, regular            SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800057 A180-005-7    PA18882 A1-02          175.00    100.00     10,000.00    100     25     75                             0      0
     Description: Suits, Gabardine, long               SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1870165 A187-016-5    PA18882 A1-03          100.00     50.00      1,500.00     30     40     50 03/06/2020 03/07/2020     60      0
     Description: Sportcoats, wool, short              SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1870166 A187-016-6    PA18882 A01-03         100.00     50.00      2,500.00     50     40     60                             0      0
     Description: Sportcoats, wool, regular            SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1870167 A187-016-7    PA18882 A1-03          100.00     50.00      2,500.00     50     25     45                             0      0
     Description: Sportcoats, wool, long               SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
2500011 A250-001-1    PA18882 A2-01           15.00     10.00          0.00      0     35     72 09/06/2020 05/07/2020     72      0
     Description: Dress shirts, cotton, small          SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
2500012 A250-001-2    PA18882 A3-01           15.00     10.00      2,000.00    200    100    250                             0      0
     Description: Dress shirts, cotton, medium         SA Code: a1  PA Code: a1
```

```
ST010 (3.02.48)                                          Stock File Report                                                    Page   2
Applewood Computers                                                                                                      02/07/2020 19:05

<------ Stock ------> Supplier  Location     Unit      Unit        Value    Number <- ReOrder -> <------- Date ------>  Quantity On
Abrev   Number         Number               Price      Cost        in Stk   in Stk  Point    Qty   Ordered     Due      Order  B/Ord

2500013 A250-001-3    PA18882 A3-03           15.00     10.00      1,000.00    100     50    100                             0      0
     Description: Dress shirts, cotton, large          SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
2500231 A250-023-1    PA18882 A03-03          12.00      6.00      1,800.00    300    100    250                             0      0
     Description: Dress Shirts, polycotton, small      SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
2500232 A250-023-2    PA18882 A03-03          12.00      6.00      2,400.00    400    100    250                             0      0
     Description: Dress shirts, polycotton, med.       SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
2500233 A250-023-3    PA18882 A03-03          12.00      6.00        600.00    100    125    100                             0      0
     Description: Dress shirts, polycotton, large      SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
2500251 A250-025-1    PA18882 A03-04          12.00      6.00        600.00    100    100    150                             0      0
     Description: Dress shirts, polycotton, sm.        SA Code: a1  PA Code: a1

 Total Stock Records 20
```

Option 5.

```
ST030 (3.02.27)                                    Stock Report                                                    Page   1
Applewood Computers                  Items ranging from A180-001-5 through A250-023-1                    02/07/2020 12:50

<------ Stock ------> Supplier  Location     Unit      Unit        Value    Number <- ReOrder -> <------- Date ------>  Quantity On
Abrev   Number          Number               Price     Cost        in Stk   in Stk  Point    Qty   Ordered     Due      Order  B/Ord

1800015 A180-001-5    PA18882 A1-01          200.00    100.00     15,000.00    150     25    100                              0      0
     Description: Suits, wool knot, short              SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800016 A180-001-6    PA18882                210.00    105.00     21,000.00    200     50    250                              0      0
     Description: Suits, wool knit, regular            SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800017 A180-001-7    PA18882 A2             210.00    105.00      7,350.00     70     25    100                              0      0
     Description: Suits, wool knit, long               SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800018 A180-001-8    PA18882 A2             220.00    110.00      2,750.00     25     10     40                              0      0
     Description: Suits, wool knit, X-Long             SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800025 A180-002-5    PA18882 A3             225.00    110.00      2,200.00     20     25     50 25/06/2020 03/07/2020     50      0
     Description: Suits, wool knit, vested, sht        SA Code: b3  PA Code: b1
-------------------------------------------------------------------------------------------------------------------------------------
1800026 A180-002-6    PA18882 A3             230.00    115.00     11,500.00    100     30    150 01/06/2020 01/07/2020     15     15
     Description: Suits, wool knit, vested, reg.       SA Code: a2  PA Code: a2
-------------------------------------------------------------------------------------------------------------------------------------
1800027 A180-002-7    PA18882 A3             240.00    120.00      3,000.00     25     30     50 01/06/2020 02/07/2020     50     50
     Description: Suits, wool knit, vested, long       SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800028 A180-002-8    PA18882 A1-01          250.00    125.00      1,250.00     10     15     30 02/06/2020 01/07/2020     30      0
     Description: Suits, wool knit, vested, X-lg       SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800056 A180-005-6    PA18882 A1             175.00    100.00     20,000.00    200     50    150                              0      0
     Description: Suits, Gabardine, regular            SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1800057 A180-005-7    PA18882 A1-02          175.00    100.00     10,000.00    100     25     75                              0      0
     Description: Suits, Gabardine, long               SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1870165 A187-016-5    PA18882 A1-03          100.00     50.00      1,500.00     30     40     50 03/06/2020 03/07/2020     60      0
     Description: Sportcoats, wool, short              SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1870166 A187-016-6    PA18882 A01-03         100.00     50.00      2,500.00     50     40     60                              0      0
     Description: Sportcoats, wool, regular            SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
1870167 A187-016-7    PA18882 A1-03          100.00     50.00      2,500.00     50     25     45                              0      0
     Description: Sportcoats, wool, long               SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
2500011 A250-001-1    PA18882 A2-01           15.00     10.00          0.00      0     35     72 09/06/2020 05/07/2020     72      0
     Description: Dress shirts, cotton, small          SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
2500012 A250-001-2    PA18882 A3-01           15.00     10.00      2,000.00    200    100    250                              0      0
     Description: Dress shirts, cotton, medium         SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
2500013 A250-001-3    PA18882 A3-03           15.00     10.00      1,000.00    100     50    100                              0      0
     Description: Dress shirts, cotton, large          SA Code: a1  PA Code: a1
-------------------------------------------------------------------------------------------------------------------------------------
2500231 A250-023-1    PA18882 A03-03          12.00      6.00      1,800.00    300    100    250                              0      0
     Description: Dress Shirts, cotton, polycotton     SA Code: a1  PA Code: a1
```

Option 5 with a range.

```
 Total stock records Printed 17
ST030 (3.02.27)                                    Stock Re-Order Report                                           Page   1
Applewood Computers                  All Items ranging from A180-001-5 through A250-023-1                02/07/2020 12:53

<------ Stock ------>                                  Supp    Stock < ReOrder >  Unit     On   <------- Date ------>    Bk   WIP
Abrev     Number     Flg Description                   Number   Qty    Pnt   Qty  Cost    Order  Ordered      Due       Ord   Qty

1800015 A180-001-5       Suits, wool knot, short        PA18882   150    25   100   100.00     0                            0
1800016 A180-001-6       Suits, wool knit, regular      PA18882   200    50   250   105.00     0                            0
1800017 A180-001-7       Suits, wool knit, long         PA18882    70    25   100   105.00     0                            0
1800018 A180-001-8       Suits, wool knit, X-Long       PA18882    25    10    40   110.00     0                            0
1800025 A180-002-5    U  Suits, wool knit, vested, sht  PA18882    20    25    50   110.00    50 25/06/2020 03/07/2020     0
1800026 A180-002-6       Suits, wool knit, vested, reg. PA18882   100    30   150   115.00    15 01/06/2020 01/07/2020    15
1800027 A180-002-7    U  Suits, wool knit, vested, long PA18882    25    30    50   120.00    50 01/06/2020 02/07/2020    50
1800028 A180-002-8    U  Suits, wool knit, vested, X-lg PA18882    10    15    30   125.00    30 02/06/2020 01/07/2020     0
1800056 A180-005-6       Suits, Gabardine, regular      PA18882   200    50   150   100.00     0                            0
1800057 A180-005-7       Suits, Gabardine, long         PA18882   100    25    75   100.00     0                            0
1870165 A187-016-5    U  Sportcoats, wool, short        PA18882    30    40    50    50.00    60 03/06/2020 03/07/2020     0
1870166 A187-016-6       Sportcoats, wool, regular      PA18882    50    40    60    50.00     0                            0
1870167 A187-016-7       Sportcoats, wool, long         PA18882    50    25    45    50.00     0                            0
2500011 A250-001-1    O  Dress shirts, cotton, small    PA18882     0    35    72    10.00    72 09/06/2020 05/07/2020     0
2500012 A250-001-2       Dress shirts, cotton, medium   PA18882   200   100   250    10.00     0                            0
2500013 A250-001-3       Dress shirts, cotton, large    PA18882   100    50   100    10.00     0                            0
2500231 A250-023-1       Dress Shirts, cotton, polycotton PA18882 300   100   250     6.00     0                            0
```

Option 3 with a range.

```
ST030 (3.02.27)                                  Stock Re-Order Report                                          Page   1
Applewood Computers                                 On Order Items                                    02/07/2020 12:56

<------ Stock ------>                                  Supp    Stock < ReOrder >  Unit     On   <------- Date ------>    Bk   WIP
Abrev     Number     Flg Description                   Number   Qty    Pnt   Qty  Cost    Order  Ordered      Due       Ord   Qty

1800025 A180-002-5    U  Suits, wool knit, vested, sht    PA18882    20    25    50   110.00    50 25/06/2020 03/07/2020     0
1800026 A180-002-6       Suits, wool knit, vested, reg.   PA18882   100    30   150   115.00    15 01/06/2020 01/07/2020    15
1800027 A180-002-7    U  Suits, wool knit, vested, long   PA18882    25    30    50   120.00    50 01/06/2020 02/07/2020    50
1800028 A180-002-8    U  Suits, wool knit, vested, X-lg   PA18882    10    15    30   125.00    30 02/06/2020 01/07/2020     0
1870165 A187-016-5    U  Sportcoats, wool, short          PA18882    30    40    50    50.00    60 03/06/2020 03/07/2020     0
2500011 A250-001-1    O  Dress shirts, cotton, small      PA18882     0    35    72    10.00    72 09/06/2020 05/07/2020     0
```

Option 3 on ordered items.

```
ST030 (3.02.27)                                  Stock Valuation Report                                         Page   1
Applewood Computers                  Items ranging from A180-001-5 through A250-023-1                       02/07/2020 12:53

<------- Stock ------>                                    Average       Replace     Stock            Value in    Retail
Abrev    Number         Description                        Cost          Cost        Qty             Stockroom    Price

1800015  A180-001-5     Suits, wool knot, short             100.00   2020,202.02     150            15,000.00      200.00
1800016  A180-001-6     Suits, wool knit, regular           105.00   2020,202.02     200            21,000.00      210.00
1800017  A180-001-7     Suits, wool knit, long              105.00   2020,202.02      70             7,350.00      210.00
1800018  A180-001-8     Suits, wool knit, X-Long            110.00   2020,202.02      25             2,750.00      220.00
1800025  A180-002-5     Suits, wool knit, vested, sht       110.00   2020,202.02      20             2,200.00      225.00
1800026  A180-002-6     Suits, wool knit, vested, reg.      115.00   2020,202.02     100            11,500.00      230.00
1800027  A180-002-7     Suits, wool knit, vested, long      120.00   2020,202.02      25             3,000.00      240.00
1800028  A180-002-8     Suits, wool knit, vested, X-lg      125.00   2020,202.02      10             1,250.00      250.00
1800056  A180-005-6     Suits, Gabardine, regular           100.00   2020,202.02     200            20,000.00      175.00
1800057  A180-005-7     Suits, Gabardine, long              100.00   2020,202.02     100            10,000.00      175.00
1870165  A187-016-5     Sportcoats, wool, short              50.00   2020,202.02      30             1,500.00      100.00
1870166  A187-016-6     Sportcoats, wool, regular            50.00   2020,202.02      50             2,500.00      100.00
1870167  A187-016-7     Sportcoats, wool, long               50.00   2020,202.02      50             2,500.00      100.00
2500011  A250-001-1     Dress shirts, cotton, small          10.00   2020,202.02       0                 0.00       15.00
2500012  A250-001-2     Dress shirts, cotton, medium         10.00   2020,202.02     200             2,000.00       15.00
2500013  A250-001-3     Dress shirts, cotton, large          10.00   2020,202.02     100             1,000.00       15.00
2500231  A250-023-1     Dress Shirts, cotton, polycotton      6.00   2020,202.02     300             1,800.00       12.00

                                                                                                --------------
                                                                                Total Value:      105,350.00
                                                                                                ==============
```

Option 1 with a range.

```
ST030 (3.02.27)                                  Stock Re-Order Report                                          Page   1
Applewood Computers                                 Understocked Items                                02/07/2020 13:16

<------ Stock ------>                                  Supp    Stock < ReOrder >  Unit     On   <------- Date ------>    Bk   WIP
Abrev     Number     Flg Description                   Number   Qty    Pnt   Qty  Cost    Order  Ordered      Due       Ord   Qty

1800025 A180-002-5    U  Suits, wool knit, vested, sht    PA18882    20    25    50   110.00    50 25/06/2020 03/07/2020     0
1800027 A180-002-7    U  Suits, wool knit, vested, long   PA18882    25    30    50   120.00    50 01/06/2020 02/07/2020    50
1800028 A180-002-8    U  Suits, wool knit, vested, X-lg   PA18882    10    15    30   125.00    30 02/06/2020 01/07/2020     0
1870165 A187-016-5    U  Sportcoats, wool, short          PA18882    30    40    50    50.00    60 03/06/2020 03/07/2020     0
2500011 A250-001-1    o  Dress shirts, cotton, small      PA18882     0    35    72    10.00    72 09/06/2020 05/07/2020     0
2500233 A250-023-3    U  Dress shirts, polycotton, large  PA18882   100   125   100     6.00     0                            0
```

Option 3 with range as understocked.

```
ST030 (3.02.27)                                  Stock Valuation Report                                         Page   1
Applewood Computers                  Items ranging from A180-001-5 through A250-025-1                       02/07/2020 13:25

<------- Stock ------>                                    Average       Replace     Stock            Value in    Retail
Abrev    Number         Description                        Cost          Cost        Qty             Stockroom    Price

1800015  A180-001-5     Suits, wool knot, short             100.00   2020,202.02     150            15,000.00      200.00
1800016  A180-001-6     Suits, wool knit, regular           105.00   2020,202.02     200            21,000.00      210.00
1800017  A180-001-7     Suits, wool knit, long              105.00   2020,202.02      70             7,350.00      210.00
1800018  A180-001-8     Suits, wool knit, X-Long            110.00   2020,202.02      25             2,750.00      220.00
1800025  A180-002-5     Suits, wool knit, vested, sht       110.00   2020,202.02      20             2,200.00      225.00
1800026  A180-002-6     Suits, wool knit, vested, reg.      115.00   2020,202.02     100            11,500.00      230.00
1800027  A180-002-7     Suits, wool knit, vested, long      120.00   2020,202.02      25             3,000.00      240.00
1800028  A180-002-8     Suits, wool knit, vested, X-lg      125.00   2020,202.02      10             1,250.00      250.00
1800056  A180-005-6     Suits, Gabardine, regular           100.00   2020,202.02     200            20,000.00      175.00
1800057  A180-005-7     Suits, Gabardine, long              100.00   2020,202.02     100            10,000.00      175.00
1870165  A187-016-5     Sportcoats, wool, short              50.00   2020,202.02      30             1,500.00      100.00
1870166  A187-016-6     Sportcoats, wool, regular            50.00   2020,202.02      50             2,500.00      100.00
1870167  A187-016-7     Sportcoats, wool, long               50.00   2020,202.02      50             2,500.00      100.00
2500011  A250-001-1     Dress shirts, cotton, small          10.00   2020,202.02       0                 0.00       15.00
2500012  A250-001-2     Dress shirts, cotton, medium         10.00   2020,202.02     200             2,000.00       15.00
2500013  A250-001-3     Dress shirts, cotton, large          10.00   2020,202.02     100             1,000.00       15.00
2500231  A250-023-1     Dress Shirts, polycotton, small       6.00   2020,202.02     300             1,800.00       12.00
2500232  A250-023-2     Dress shirts, polycotton, med.        6.00   2020,202.02     400             2,400.00       12.00
2500233  A250-023-3     Dress shirts, polycotton, large       6.00   2020,202.02     100               600.00       12.00
2500251  A250-025-1     Dress shirts, polycotton, sm.         6.00   2020,202.02     100               600.00       12.00

                                                                                                --------------
                                                                                Total Value:      108,950.00
                                                                                                ==============
```

Option 1 with a differing range.

```
ST030 (3.02.26)                                  Stock Activity Report                                          Page   1
Applewood Computers                  All Items ranging from A180-001-5 through A250-025-1                   02/07/2020 13:30

<------ Stock ------>                                  Current  Retail   Average      Stock   <- Current Month -><- Year to Date -->
Abrev     Number      Description                        Stock   Price      Cost       Value      Add   Ded    Net   Add   Ded    Net

1800015 A180-001-5    Suits, wool knot, short              150    200.00    100.00   15,000.00     0     0     0     0     0     0
1800016 A180-001-6    Suits, wool knit, regular            200    210.00    105.00   21,000.00     0     0     0     0     0     0
1800017 A180-001-7    Suits, wool knit, long                70    210.00    105.00    7,350.00     0     0     0     0     0     0
1800018 A180-001-8    Suits, wool knit, X-Long              25    220.00    110.00    2,750.00     0     0     0     0     0     0
1800025 A180-002-5    Suits, wool knit, vested, sht         20    225.00    110.00    2,200.00     0     0     0     0     0     0
1800026 A180-002-6    Suits, wool knit, vested, reg.       100    230.00    115.00   11,500.00     0     0     0     0     0     0
1800027 A180-002-7    Suits, wool knit, vested, long        25    240.00    120.00    3,000.00     0     0     0     0     0     0
1800028 A180-002-8    Suits, wool knit, vested, X-lg        10    250.00    125.00    1,250.00     0     0     0     0     0     0
1800056 A180-005-6    Suits, Gabardine, regular            200    175.00    100.00   20,000.00     0     0     0     0     0     0
1800057 A180-005-7    Suits, Gabardine, long               100    175.00    100.00   10,000.00     0     0     0     0     0     0
1870165 A187-016-5    Sportcoats, wool, short               30    100.00     50.00    1,500.00     0     0     0     0     0     0
1870166 A187-016-6    Sportcoats, wool, regular             50    100.00     50.00    2,500.00     0     0     0     0     0     0
1870167 A187-016-7    Sportcoats, wool, long                50    100.00     50.00    2,500.00     0     0     0     0     0     0
2500011 A250-001-1    Dress shirts, cotton, small            0     15.00     10.00        0.00     0     0     0     0     0     0
2500012 A250-001-2    Dress shirts, cotton, medium         200     15.00     10.00    2,000.00     0     0     0     0     0     0
2500013 A250-001-3    Dress shirts, cotton, large          100     15.00     10.00    1,000.00     0     0     0     0     0     0
2500231 A250-023-1    Dress Shirts, polycotton, small      300     12.00      6.00    1,800.00     0     0     0     0     0     0
2500232 A250-023-2    Dress shirts, polycotton, med.       400     12.00      6.00    2,400.00     0     0     0     0     0     0
2500233 A250-023-3    Dress shirts, polycotton, large      100     12.00      6.00      600.00     0     0     0     0     0     0
2500251 A250-025-1    Dress shirts, polycotton, sm.        100     12.00      6.00      600.00     0     0     0     0     0     0
```

Option 2 with a range.

```
ST030 (3.02.29)                                  Stock Report by Description                                    Page   1
Applewood Computers                                   All Items                                                 15/08/2023 15:56

Description                     Abrev    Number            Price       Cost     Held

ACAS Sub fee 12 mths            ACASUB1  ACAS-SUB          450.00     250.0000          Services only Product
Dress Shirts, polycotton, small 2500231  A250-023-1         12.00       6.0000   300
Dress shirts, cotton, large     2500013  A250-001-3         15.00      10.0000   100
Dress shirts, cotton, medium    2500012  A250-001-2         15.00      10.0000   200
Dress shirts, cotton, small     2500011  A250-001-1         15.00      10.0000
Dress shirts, polycotton, large 2500233  A250-023-3         12.00       6.0000   100
Dress shirts, polycotton, med.  2500232  A250-023-2         12.00       6.0000   400
Dress shirts, polycotton, sm.   2500251  A250-025-1         12.00       6.0000   100
POst and packing 1 - < 1Kg      P&P1     P&P1                3.95       3.9500          Services only Product
Post & packing - 2 - 5Kg        P&P3     P&P3                6.95       6.9500          Services only Product
Post & packing 1 - 1 - 2 KG     P&P2     P&P2                4.95       4.9500          Services only Product
Post & packing 5 - 10 kg        P&P4     P&P4                8.95       8.9500          Services only Product
Sportcoats, wool, long          1870167  A187-016-7        100.00      50.0000    50
Sportcoats, wool, regular       1870166  A187-016-6        100.00      50.0000    50
Sportcoats, wool, short         1870165  A187-016-5        100.00      50.0000    30
Suits, Gabardine, long          1800057  A180-005-7        175.00     100.0000   100
Suits, Gabardine, regular       1800056  A180-005-6        175.00     100.0000   200
Suits, wool knit, X-Long        1800018  A180-001-8        220.00     110.0000    25
Suits, wool knit, long          1800017  A180-001-7        210.00     105.0000    70
Suits, wool knit, regular       1800016  A180-001-6        210.00     105.0000   200
Suits, wool knit, vested, X-lg  1800028  A180-002-8        250.00     125.0000    10
Suits, wool knit, vested, long  1800027  A180-002-7        240.00     120.0000    25
Suits, wool knit, vested, reg.  1800026  A180-002-6        230.00     115.0000   100
Suits, wool knit, vested, sht   1800025  A180-002-5        225.00     110.0000    20
Suits, wool knot, short         1800015  A180-001-5        200.00     100.0000   150

 Total stock records Printed 25
```

Option 6.

```
ST030 (3.02.29)                                  Stock History Report                                           Page   1
Applewood Computers                                   All Items                                                 15/08/2023 16:43

<------ Stock ------> Description          This <----------------------------- History for the Year ------------------------------->
Abrev   Number                             Month

1800015 A180-001-5    Suits, wool knot,        0     0     0     0     0     0     0     0     0     0     0     0     0
1800016 A180-001-6    Suits, wool knit,        0     0     0     0     0     0     0     0     0     0     0     0     0
1800017 A180-001-7    Suits, wool knit,        0     0     0     0     0     0     0     0     0     0     0     0     0
1800018 A180-001-8    Suits, wool knit,        0     0     0     0     0     0     0     0     0     0     0     0     0
1800025 A180-002-5    Suits, wool knit,        0     0     0     0     0     0     0     0     0     0     0     0     0
1800026 A180-002-6    Suits, wool knit,        0     0     0     0     0     0     0     0     0     0     0     0     0
1800027 A180-002-7    Suits, wool knit,        0     0     0     0     0     0     0     0     0     0     0     0     0
1800028 A180-002-8    Suits, wool knit,        0     0     0     0     0     0     0     0     0     0     0     0     0
1800056 A180-005-6    Suits, Gabardine,        0     0     0     0     0     0     0     0     0     0     0     0     0
1800057 A180-005-7    Suits, Gabardine,        0     0     0     0     0     0     0     0     0     0     0     0     0
1870165 A187-016-5    Sportcoats, wool,        0     0     0     0     0     0     0     0     0     0     0     0     0
1870166 A187-016-6    Sportcoats, wool,        0     0     0     0     0     0     0     0     0     0     0     0     0
1870167 A187-016-7    Sportcoats, wool,        0     0     0     0     0     0     0     0     0     0     0     0     0
2500011 A250-001-1    Dress shirts, cott       0     0     0     0     0     0     0     0     0     0     0     0     0
2500012 A250-001-2    Dress shirts, cott       0     0     0     0     0     0     0     0     0     0     0     0     0
2500013 A250-001-3    Dress shirts, cott       0     0     0     0     0     0     0     0     0     0     0     0     0
2500231 A250-023-1    Dress Shirts, poly       0     0     0     0     0     0     0     0     0     0     0     0     0
2500232 A250-023-2    Dress shirts, poly       0     0     0     0     0     0     0     0     0     0     0     0     0
2500233 A250-023-3    Dress shirts, poly       0     0     0     0     0     0     0     0     0     0     0     0     0
2500251 A250-025-1    Dress shirts, poly       0     0     0     0     0     0     0     0     0     0     0     0     0
ACASUB1 ACAS-SUB      ACAS Sub fee 12 mt       0     0     0     0     0     0     0     0     0     0     0     0     0
P&P1    P&P1          POst and packing 1       0     0     0     0     0     0     0     0     0     0     0     0     0
P&P2    P&P2          Post & packing 1 -       0     0     0     0     0     0     0     0     0     0     0     0     0
P&P3    P&P3          Post & packing - 2       0     0     0     0     0     0     0     0     0     0     0     0     0
P&P4    P&P4          Post & packing 5 -       0     0     0     0     0     0     0     0     0     0     0     0     0

 Total stock records Printed 25
```

Option 4 History at beginning of year.

Option 7 - Report by locations.

TO BE ADDED

9. Operations

9.1. Operational Overview

9.1.1. Set-up

System set up involves the following steps but see chapter 6.1 at page 26 for more detailed information (as well as the manual ACAS – Building the ACAS System):

1. Install the latest version of GnuCOBOL or the included one supplied with ACAS.
2. Install any required extra packages needed by GnuCOBOL, if not already installed.
3. Run the tests for GnuCOBOL by running both groups of tests as per the read me files. Do not proceed until successful. ***This is very important.***
4. Install the Cobol compiler.
5. Create a working directory for ACAS source code and copy or tar the code to it.
6. Create the 'bin' directory in your home directory if it does not exist.
7. Run the ACAS compile scripts as supplied.
8. If any errors occur fix and rerun 7.
9. When all have compiled correctly, install the ACAS system to your local bin directory by running ./install-acas.sh. An additional script is available if this is not the first time you have run the install scripts namely install-ACAS-preinstalled.sh as this will not re-set up the needed directories nor modify your .bashrc file again, which will not cause problems, but is sloppy.

To set the system parameters you call up the Stock Control system by the command 'stock', set the **Parameters** according to your needs. At first time start-up the system takes you immediately to the **Parameter Entry** program where you can set all of the parameters regardless of what sub system you have used first e.g., Sales, Purchase, Stock, IRS & General.

9.1.2. Normal Processing

Normal processing includes adding to stock when goods arrive, deducting stock when they leave, generating the reports, and, if you wish (recommended) audit by printing the transaction proofs. Note that if the sales ledger invoicing system is also used linked to the Stock Control system the need to use the 'Deduct stock' function will be avoided and likewise the purchase ledger system being linked to Stock control will reduce the need to use the 'Add to stock' function.

To add to stock you select the **Stock Movements** program (st020) from the menu, access the item by item number and enter the quantity added and its cost. The program updates the quantities on order and back-ordered by subtracting the amount added from both values You can then change the order dates or adjust the other order information. Pressing *Escape* leaves the transaction and will allow you to begins the next additions to stock. *Escape* once more returns you to the Stock Control menu.

To record deductions from stock select the menu program **Deduct Stock**. Access the part as for adding to stock and enter the quantity deducted. The program automatically updates the quantity in stock.

To generate a report, select the desired reporting program from the system menu, choose the report options available, set up your printer, and print.

When you want to add new items to your stock, they must be added to the Stock item file through the **Item Entry** program.

This program like the Reports (st040) can be automatically run via two parameters in the command with stock program and for st020 to autorun audit reports it is :
stock NULL st020

This will run on a given date / time say 1st of the month at 01:00 producing the Audit Report then will clear down the audit record. You need to ensure that the data files are backed up before hand.

Note that this program (sl020) will be forced to run if autorun is done for Reports, and Audit reports have not been processed for the month.

As running processes via cron or crontab, on the last day of the month may be tricky to set up as it uses a day number, the way around it, is to use the first of the month before any one starts work and you just need the computer running along with the default printer turned on with paper.

9.2. Setting System Parameters

See the separate manual ACAS – Building the ACAS System for detailed instructions on the set up of the ACAS system parameter file.

9.3. Building the Stock Item File

Once the system parameters have been set up, to build the Stock item file, select the Stock **Item Item Maintenance** program from the system menu, option B.

To add items to the file, selection option 1, enter the stock item number and Tab. The item number may not be more than 13 characters long, may contain only the letters A through Z, the numbers 0 through 9, dashes, or slashes. Next is the Abbreviated reference number normally used as an internal stock reference regardless of the supplier, called here PL Fast Key, which is 7 characters long and after entering that, again Tab to enter the next block of information for description, stock location (where the item is located in stock room or warehouse), next is up to three suppliers using the purchase ledger supplier numbers To advance the cursor after each field use Tab or right arrow. If you need to back up a field or two use back tab (shift/Tab, When all is entered use continue for the next block which is the differing stock volumes. followed by Sales and Purchase analysis codes and last is the Service flag and this you set to N for normal stock items and Y, if this is for a Services item only and these are items that have no stock recorded and here such as special charges such as fuel surcharge, courier fees, rentals or other special services.
if you are processing any WIP stock items enter any values as needed using the same keys to move through each field but this needs to be predefined in the ACAS parameter system file if you will be using this facility in advanced of entering new stock.

Note the allowed entries for each field but they are high lighted by the characters [and] and the digit '9' means a one digit number in range 0 through 9:

Stock Number	Any 13 characters (converted to upper case).
Stock Abrev. No.	Any 7 characters (converted to upper case).
Description:	32 characters maximum.
Purchase code	2 characters (converted to lower case). See the Purchase Ledger manual for more information.
Sales code	2 characters (converted to lower case). See the Sales Ledger manual for more information.
Stockroom Qty:	999,999 - the comma here is to make it easier to read.
Reorder Point:	999,999 do not actually enter it.
Reorder Qty:	999,999
Retail Price:	9,999,999.99
Stock Value:	999,999,999.99
Supplier Number:	Any 6 upper case digits + 1 check digit.
Construction:	Any 7 upper case digits.
Cost/Unit:	9,999,999.9999
Qty on Order:	999,999
Date Ordered:	dd/mm/ccyy or mm/dd/ccyy or ccyy/mm/dd.
Date Due:	dd/mm/ccyy or mm/dd/ccyy or ccyy/mm/dd.
Backorder Qty:	999,999
Pre Sales:	999,999
Wip:	999,999

If you wish the **Activity Report** to reflect original additions to the system, do not make entries for the stockroom quantity, stock value (unless you have chosen not to use

average valuation), or cost per unit. Instead, make all other entries for the item, then use the **Add to Stock** program to enter the stockroom quantity, Stock value, and cost per unit.

Once you enter a valid stock item, the *Escape* box appears and selecting S for Save (the default) adds the record to the file and returns for the next item. Selecting B will start again without saving the information you have just entered, and Q will quit the stock record creation process.. An Escape or spaces at the request for a stock number takes you out of the adding mode and returns you to the sub menu option

9.4. Adding, Changing, Deleting, & Examining Stock Items

Use the **Set-up Stock option** to add new items to the file,and use the other options such as **Amend** to change field values for existing records, **Delete** to delete a stock item no longer stocked and, **Renumber** to renumber the stock records or **Display** to examine items on the file. In addition you can **Print** all stock records.

When you add a new item to the file and want the stockroom quantity to be reflected on the **Activity Report** or audit proofs, do not enter that quantity through **Set-up Stock**; instead, enter that information through the **Stock Movements** option. If you've chosen Stock valuation, or want the addition reflected on the audit proof, do not enter the stockroom quantity, unit cost, or Stock value through **Set-up Stock option**, but rather through the **Stock Movement** option.

To change an item already in the system, access the record when the cursor is at the access key field by entering the item number.

Move the cursor forward to the desired field with Return, or back a field with CTRL-B (once a record is accessed). Type in the new value and hit Return to enter it. If you want audit, do not change the stockroom quantity, Stock value, or cost per unit fields through the **Item Entry** program. If you choose the average valuation feature, do not change the stockroom quantity, Stock value, or cost per unit through **Item Entry**. You may alter the item number, but note that this may put the file out of order and necessitate a sort before you can use any program besides **Item Entry**, **Item File Print**.

To delete an item from the file, access the record via **Stock Record Deletion** option by entering the stock number as explained above followed by TAB or return, the details of the record is shown and to actually delete it, select **D** in the escape code box followed by Return, you can also select options **S** to save it and **B** to start again without doing anything. If you have finished with this function, press Escape or leave field as spaces and Return will quit and return to the Stock Maintenance menu where 9 will leave this operation.

Although not physically removed from the file, the item can no longer be accessed. To physically remove deleted records you must run the main menu option **Stock File Compression** (see Chapter 23). Because the record for each Stock item contains more information than is shown on the **Set-Up Stock** screen, you should delete rather than change an item (since you cannot change all the information on the record).

To examine a Stock item, use menu options **C**, sub menu option **5** (also can be indicated in this manual as option C.5) to Display stock records.

If you have chosen to audit additions and deductions, it is usually best to use **Set-Up Stock** to examine the item; besides the additional information, the audit file does not need to be proofed and erased, for example, if it is of the deductions type and you want information from the additions screen.

9.5. Adding to Stock

Use the **Add to Stock** program to increase the stockroom quantity, or change order information for a Stock item.

To use this program, the item files must be sorted by item number (see Chapter 22), and the audit file must be of the additions type if you have requested additions transactions to be audited. If the audit file is not an additions audit file, you should print a transaction proof of the current deductions file, and erase it, before you begin the add to stock transactions. The **Add to Stock** program creates a new additions audit file and increases the "batch number" by one.

When the program asks if you want to erase the audit file, you may respond with Y (YES), which erases it, with N (NO), which leaves it intact and ends the **Add to Stock** program, or with Escape, which is the same as NO.

To make an addition to stock, first call up the record for that Stock item. With the cursor at the Item number field, enter the item number in its exact form.

Enter the quantity added to stock and hit Return to advance to the next field if the quantity added field is not filled. Enter the cost per unit of the stock received and update the order information fields. Do not enter commas, the program inserts them where needed. If an order is filled and you wish to clear the date fields, type "none" in the field. You may cycle through the fields with Return, Tab and Back Tab (for going back a field), adjusting the information as necessary until it is correct. The record itself, and the associated accumulators are not updated until you hit Escape. You may then enter another addition to stock transaction, or enter Escape again to return to the system menu.

An addition to stock increases the stockroom quantity and decreases the quantity on order and the quantity back-ordered. The quantity back-ordered is treated as a subset of the quantity on order.

To back out (correct) an addition to stock that was made too large, enter a negative number in the amount of the error (at the same unit cost as the original entry). Do not correct such an error by an offsetting deduction from stock as this will make the activity report inaccurate. For example, if you discover you have made an entry too large by 10 units, enter 10- (or -10) in the quantity added field and the appropriate value in the cost per unit field to correct the error. If the entry was made too small, just add the additional units in the regular way.

If you have set up the system parameter file to use Back Order processing, then the Stock Additions program will also record new stock to the BO file including stock number, date received, quantity and other information, and this file is used with sl970 to produce reports of back orders outstanding by customer and by stock item including noting stock items that are now in stock where an invoice can be entered. See the Sales Ledger manual for details. The SL invoicing program will allow auto processing of these BO records when ever first started if any BO records exist and new stock has arrived as created by the Stock Additions program then this process will run.

9.6. Deducting from Stock

Use the **Deduct Stock** program to decrease the stockroom quantity when goods leave your Stock.

To use this program, the item files must be sorted by item number (see Chapter 22), and the audit file must be of the deductions type if you have requested deductions transactions to be audited. If the audit file is not a deductions audit file, you should print a transaction proof of the current additions file, and erase it, before you begin the deduct stock transactions. The **Deduct Stock** program creates a new deductions audit file and increases the "batch number" by one.

When the program asks if you want to erase the audit file you may respond with Y (YES), which erases it, with N (NO), which ends the **Deduct Stock** program, or with ESCAPE, which is the same as NO.

To make a deduction from stock, first call up the record for that Stock item. With the cursor at the item number field, enter the item number in the exact form.

Enter the quantity leaving stock and follow with Return. The program updates the stockroom quantity, and, if average valuation has been requested, decreases the Stock value based on the current average value the item. The cursor returns to the item number field where you can enter a new number to begin the next transaction. Escape returns you to the system menu.

To back out (correct) a deduction made too large, enter a negative amount in the quantity deducted field in the amount of the error. Do not correct the error by making an addition to stock, as this makes the activity report inaccurate.

If you've chosen the average valuation feature, an addition to stock between the time a deduction error is made and the time it is discovered may change the average value of that item. Consequently, the adjustment of the error corrects the stockroom quantity, but the new Stock value, computed using a different average value for the item, may not be the same. The difference will usually not be critical, however, since Stock value is an estimate based on averages anyway. Allowing only an addition or deduction audit file to exist at one time helps prevent this situation from arising, since a careful examination of the transaction proofs may allow you to catch the error before an addition to stock changes the average value of the Stock item.

9.7. Producing the Reports

Once system set up is complete you can print Stock Control System reports from the system menu at any time. For all but the **Item File Print**, the item files must be in sorted order.

To print a report, select the desired report program from the system menu and choose the report options you wish to employ. Be sure your printer is ready and the paper aligned. After the printout finishes, the system menu returns.

For certain reports, a range option is available that lets you select a range of high and low item numbers. Leaving the range values blank by hitting Return reports on all Stock items. Giving a low value but not a high value reports on all items with numbers above and including that value. Giving a high value but not a low value reports on all items with numbers below and including that value.

If the average valuation option has not been chosen, the **Valuation Report** will not be useful unless you have maintained the Stock value manually.

At the end of each current period or to-date period, reset the appropriate activity registers to zero by running the **Start an Activity Period** program and answering its requests.

The reporting options available are :

1. Valuation.
2. Activity.
3. Re-Order.
4. Stock History.
5. Stock.
6. Stock by Description in alphabetic order.
7. Stock by Location in alphabetic order.

For option 6 there is no range option. Provides a full list by description with the abbreviated and full code being detailed along with the retail price and current held stock as well as a flag to indicate if item is a Service only product so no held stock is shown as none is present.

See 8.7 on page 57 for sample reports.

10. Appendices

10.1. Display Formats

Note the version numbers that are after the program name displayed on each screen may well be older than the current version supplied and that the screen depth may differ based on your settings for the terminal program used. ACAS will in most instances make use of a deeper or length size to display and accept data.

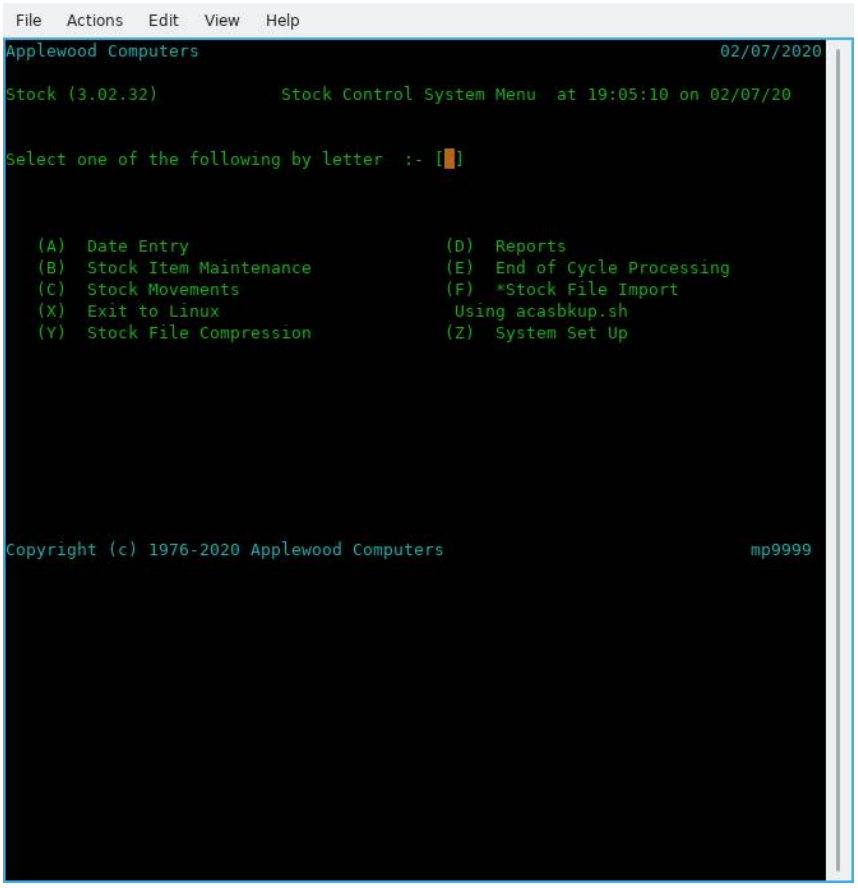

Figure 9.1 Stock Menu

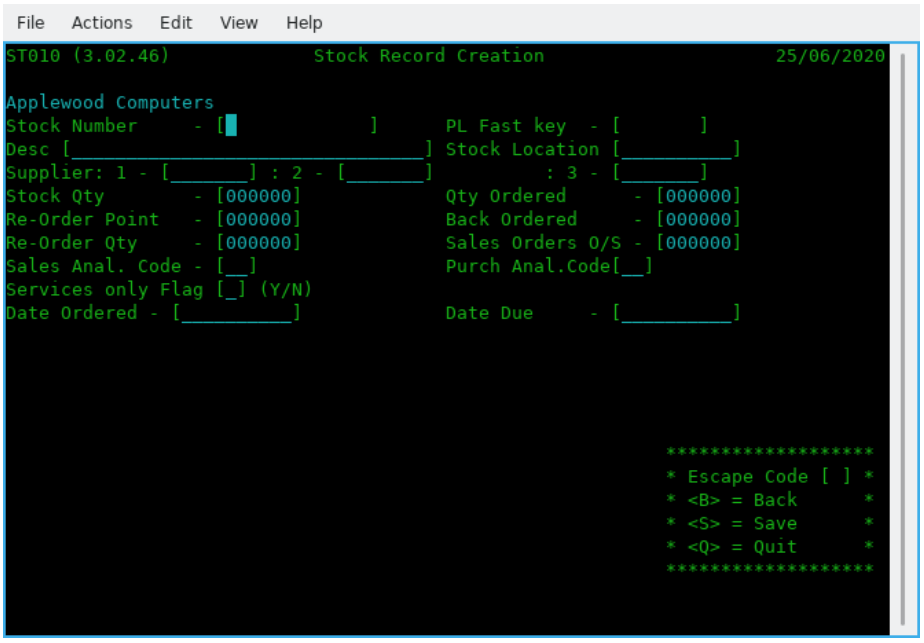

Figure 9.2 Stock data entry 1

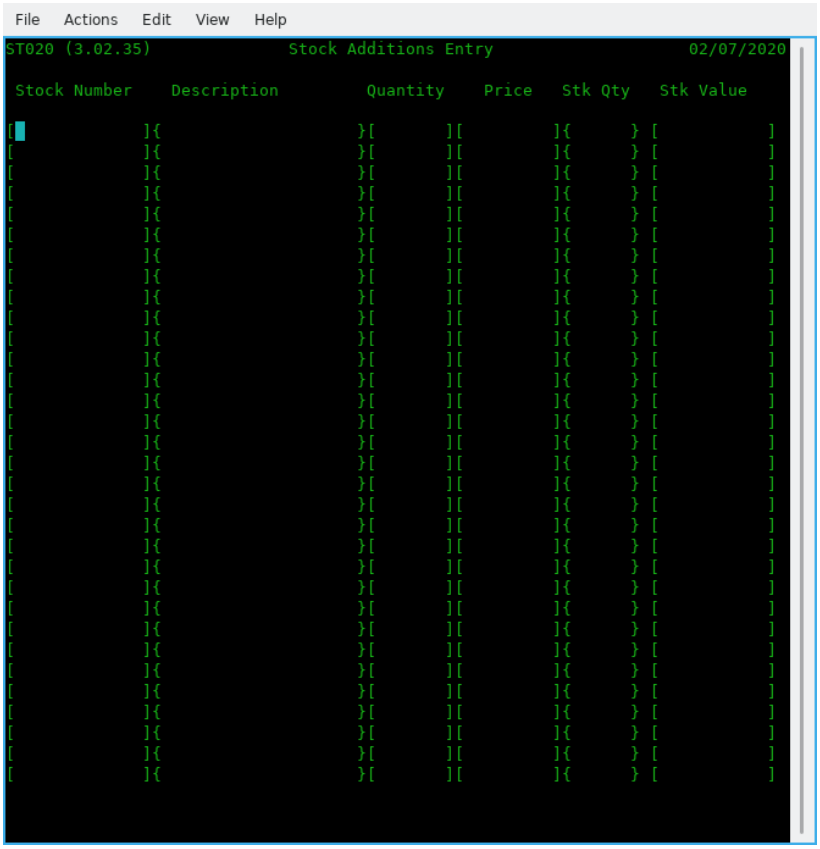

Figure 9.3 Stock Additions

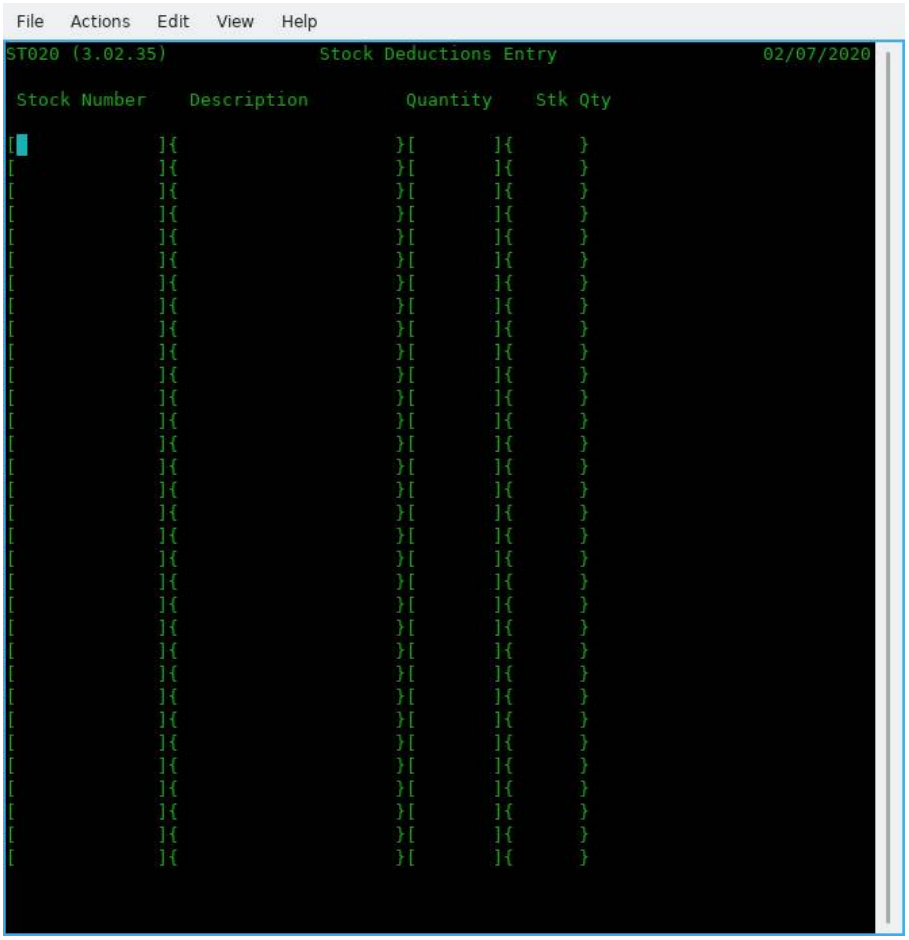

Figure 9.4 Stock Deductions

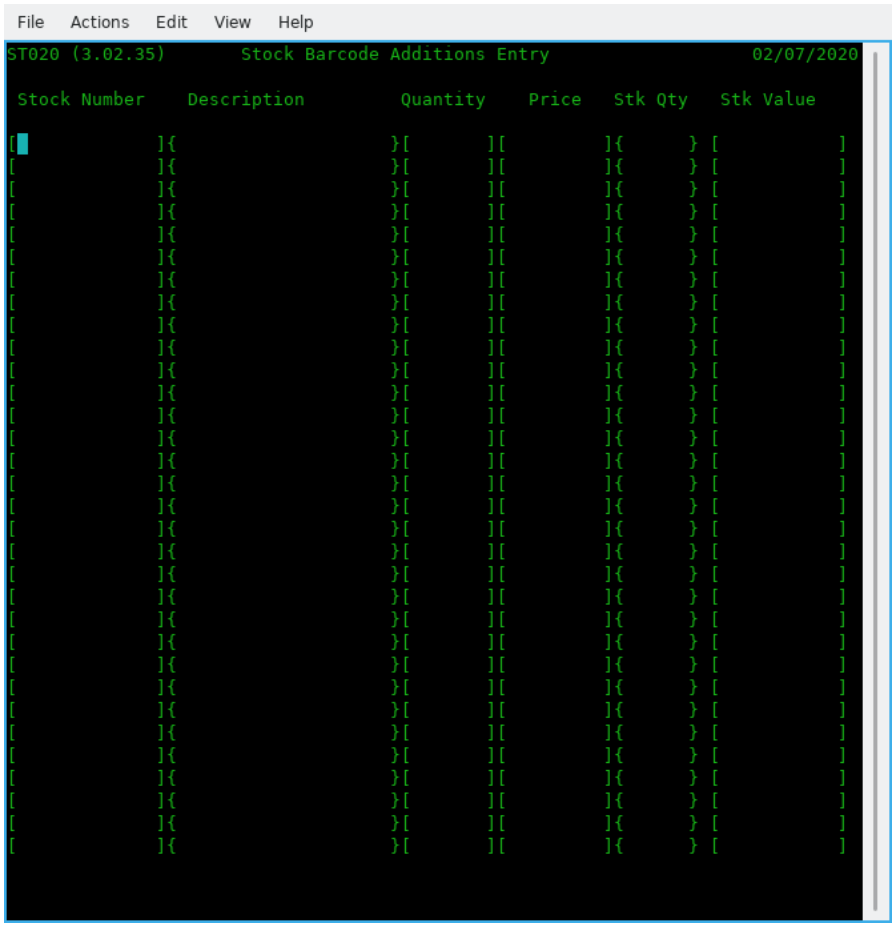

Figure 9.5 Stock bar-code Additions

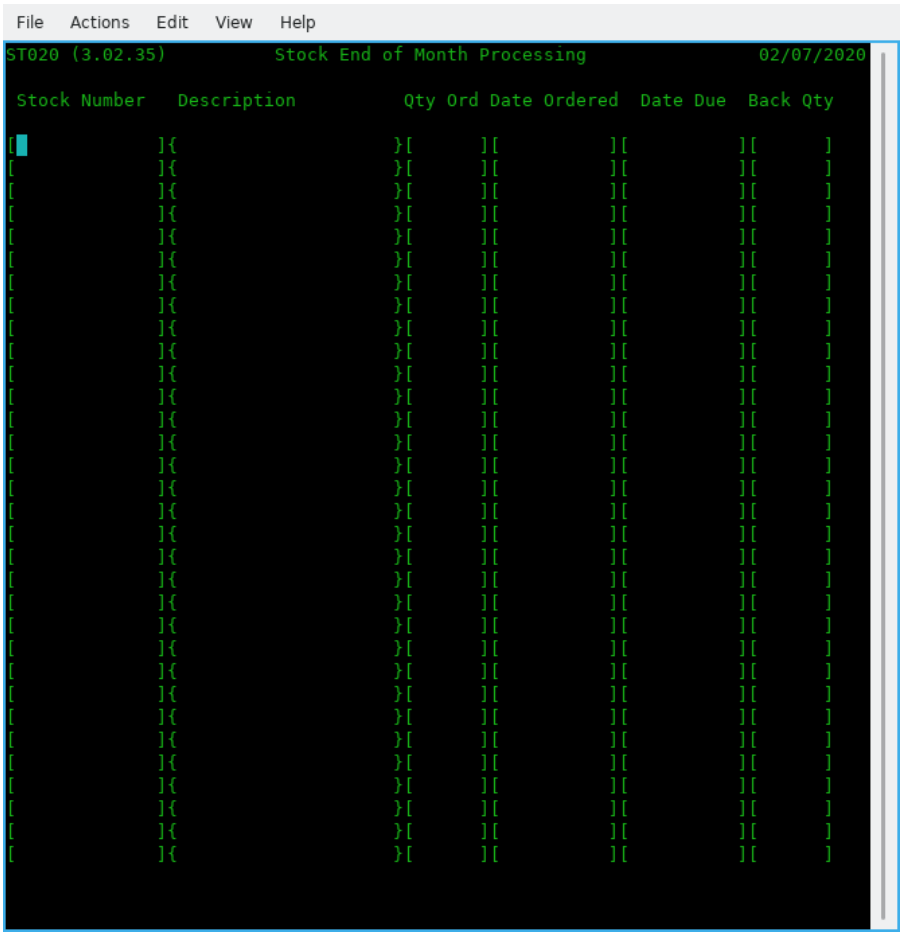

Figure 9.6 Stock Order data entry

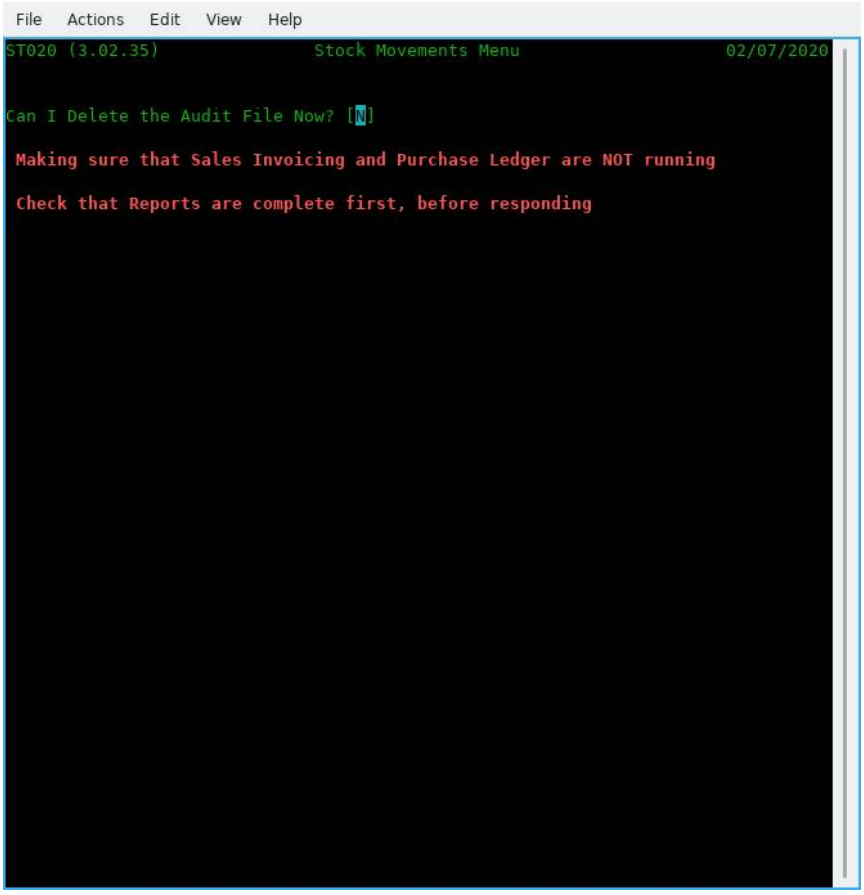

Figure 9.7 Stock End of Monthly audit reporting

THERE ARE MISSING MENU / SCREEN ITEMS and NEED TO BE ADDED.

11. Reporting problems with ACAS products

Use the bug reporting function on the ACAS sourceforge website for both problems in the software and in any supplied manual. Do not forget to specify the name & version of the program with the problem, also specify the level of the issues such as : -

Priority Level	Title	Description
1.	Critical	Cannot run a previously working ACAS system.
2.	Urgent	Can run the system but cannot work with some functions.
3.	Partial	A function is not working as described in manual.
4.	Functional	Needs additional functionality.
5.	Cosmetic	A minor problem such as in display layout or the colours used or the way data is entered.
6.	Undefined	Low priority issue not within other levels.

Commercial users should also prefix priority number with a ‘C’.
Level 1 is same day / 4 hours. [with prefix C otherwise 24 hours, where possible].
Level 2 is same day / 12 hours. [with prefix C otherwise 72 hours, where possible].
Level 3 & 4 is 3 days. [with prefix C otherwise, as time permits].
Level 5 & 6 is as time permits. [with prefix C, as time permits].

E & OE Applies.
The above timings is on a best effort basis only as holidays etc can interfere with these.

Commercial users with active maintenance contracts, can also use the direct website as outlined in the supplied support documentation and the email address mention below for problem reporting.

If it is critical or urgent you can also send an email, see address on inside cover but still use the bug reporting system so other users can see that it has been reported.

Remember if it is not reported – It cannot be fixed and do not *assume* that some one else has reported it. Check the bug lists to see.

If in doubt, issue a bug report. if warranted, retain all data files in case they need to be sent in (but only after archiving them with zip, rar or tar with a file name indicating the customer / user).

Subject to the problem you may be asked to send these in for inspection. After the problem has been located and resolved, these files will be deleted.

This service is for ALL users of ACAS.

12. Error messages used within the ACAS system

Here is a list by system and program of all messages that signify an error or warning that can appear.
However there are warning messages that can appear during data entry that are not listed.

12.1. Cobol and C Error Messages

Applewood Computers software is designed to trap almost all errors which can arise under normal circumstances, but due to language limitations and/or hardware problems, some errors may occur which the programs themselves cannot handle. These errors are Cobol or C errors – see 13 File Access Error numbers page 90. You should look at the Cobol compiler documentation for more information as these can change between versions of both the Cobol compiler as well as the GCC C compiler. Also see 13 RDBMS error codes page 90 and 13.1 MySQL SQL Status messages on page 92 for additional RDBMS status values that can also be displayed.

Some of these can signify problems with lack of free storage space on your hard drive, a hard issue with it or you are running in the wrong directory in which case check your environment variables for the settings of ACAS_BIN for the programs and more importantly the environment variable ACAS_LEDGERS for your data.
This you can find in konsole program by typing : set | grep ACAS_LEDGERS and this will result in a text similar to : ACAS_LEDGERS=/home/yourusername/ACAS

This applies even if you are running using RDBMS as the system parameter file is required to be a Cobol file at start up and located in this directory. An temporary override for this setting can be done when ever running any of the system programs i.e., ACAS, irs, general, purchase, sales or stock by adding to the system name the string ACAS_LEDGERS=a new path such as :
sales ACAS_LEDGERS=/home/username/temporary-directory

12.2. ACAS Error Messages

Messages that instruct you to contact your Supplier or IT support generally indicate an error condition that should not arise under normal circumstances such as no free disk space. Ensure that the hard drive you are using has loads of free space such as over 1 GB and with the risk of fragmentation of data per file, it is always wise to make it more. Here more so in Windows based systems but can apply to *nix one's as well.

References to ACAS support usually mean a possible programming error that over the years has not ever appeared but with a changed Cobol compiler (GnuCOBOL) and the usage of RDBMS, anything is possible.

Programs names herein are shown in upper case for ease of reading but are actually stored and used within the ACAS system using lower case letters other than the optional master menu program ACAS.

12.3. SSDs and Garbage Collection.

If you are running with SSD's you should be aware of the problem of garbage collection on *nix based systems such as Linux. This relates to the fact that all SSD's are not created equal, e.g., some have good controllers built-in and other – well not really.

An example, when we first installed SSD into Linux based system we found out very quickly that you had to run a Linux utility called fstrim on a regular basis like in nightly so we set up a cron job to do just that at midnight, running as sudo (or root) 'fstrim -av'.
Great you think, well not so much when running Crucial SSDs as their controller require 8+ hours of idle to process the garbage and even then may be not, as it forced us to shutdown the system and boot into bios and leave it – No not a solution as the SSD filled up very quickly and I do mean quickly and I cannot spare the system time to make it offline. This is not the only brand that will cause this problem.

So SSD mk 2 – bought Samsung 850 as a test and found out that their controller did not require such idle time. Then bought two m.2 960's SSD's and installed in server and laptop (windows) an Samsung 850 into a Mac Pro dual quad Xeon CPU system and all work as advertised well apart from a media system that also has a m.2 that in some circumstances such as transferring lots of video media and yes I mean a lot – like 40 GB. As the SSD is the system partition all data coming in, goes to that first before being moved to the required location and that is with copying to the specific hard drive as the SSD is used as some temporary data areas although not sure where exactly.
So in this instance it cannot do a clear up quickly enough to cope again do not know why. Just have to remember not to do a lot at a time :(

So what is this about I hear you ask? Well unlike a normal hard drive that, when you delete a file it is job done. It is not that straight forwards for a SSD. When a file is deleted or moved or updated it has sectors / clusters on the media that are no longer in use and the SSD controller has to go through a process called Garbage Collection and this mean the onboard SSD controller goes though each sector checking if it is not in use then clear the whole sector down by setting it to X'00000000' (X = Hex) for every byte in the sector, so takes a wee bit of time.

Now as we run the fstrim process every midnight it keep it under control at least totally on the servers and Mac pro. The Windows system seems to cope without doing a thing – just as well really as I have no idea what it does as I cannot find any docs on it.

So long story very short if you run SSD's on a Linux based system you MUST make sure fstrim is run often enough to clean it up before it gets out of space that has not been cleaned up because regardless of its size, if all clusters have been used and have not been cleaned up it is the equivalent of a filled drive, regardless of size and we are using 256GB and 500GB despite them only used for booting and minor other data requirements, they can and do get clogged up.

You have been warned. So keep that in mind when looking at some of these ACAS error messages regarding a full drive. I recommend you do NOT use a SSD to hold application data on and their performance is not that heavy a usage problem as most of the time most of ACAS is waiting for the user to key some thing in and the grunt work is done quickly enough even if you have say 25,000 records for each file and we are running in production

over 1,000 for both sales and purchase ledgers and can (for clients) be creating 1,000+ invoices/receipts per day and over Xmas it was closer to 5,000 per day. Kept the pickers and packers very busy.

Some of these transactions came through their online shop that is linked into Sales Ledger with a bespoke program to transfer the data over every so many minutes.
One of the benefits of running a batching system where all invoices go to one printer, picking /packing lists go to another (in the warehouse) both using continuous stationary and statements to a third (laser) when needed. The laser printer has an overlay feature that holds the graphics for a header page so that ACAS output just prints out in the correct locations on the page.
Should point out that we use Matrix and line-printers as well as Laser printers to push things through with auto folding and enveloping where needed.

12.4. ACAS System wide Messages

These apply to all system programs, ACAS, IRS, General, Purchase, Sales, Stock etc.

Messages produced throughout ACAS are prefixed by a two letter code that indicates what program produced them and the program could be called from another system, e.g., PL070 and SL070 can be called by Stock, Sales or Purchase to set up the Analysis file. The system parameter set up program can be called by any of the systems to set up or amend it.
There are other instances of this type of processing that can occur.
Messaging prefixes are :

IR = IRS
GL = General Ledger
PL = Purchase Ledger.
SL = Sales Ledger
ST = Stock Control
SY = System set up programs or programs and system wide messages.
SM = DAL's (Data Access Layer) for RDBMS processing.
AC = FH's common system wide messages.

From initial start up in all system programs.

SY005 Invalid Date: Formats are dd/mm/ccyy, mm/dd/ccyy or ccyy/mm/dd only. i.e, 1/1/2011 it should be 01/01/2011.

SY006 Program Arguments limited to a maximum of two and you have specified n
As indicated, the only values currently accepted is ACAS_LEDGERS=path-to-data-directory.

SY007 Program arguments incorrect:
You have specified parameters to a system program that are wrong. Correct and rerun.
The only values currently accepted is : ACAS_LEDGERS=path-to-data-directory.

SY008 Note message & Hit return
As indicated see the other preceding message.

SY009 Environment variables not yet set up : ABORTING
Working directory environment variable not set up, fix and rerun. Is this a new user ?
This should have been done by the ACAS setup process install-ACAS.sh if so, run it for user.

SY011 Error on systemMT processing, Fs-reply = nn
Got an error when writing to the RBD for the first time nn = return value but could have a preceding msg.
Could mean that the RDB is not running or set up correctly. If not report to ACAS software support.

From System parameter set up program (SYS002) callable by all system programs.

SY101 Open I-O Err = nn: Contact IT support and provide nn*. Should not occur.
SY102 Read Err 1 = nn: Contact IT support and provide nn*. Should not occur.
SY103 Rewrite Err 1 = nn: Contact IT support and provide nn*. Should not occur.

SY104 Fix and Press Enter: See previous message.
SY105 Lines > 28 Print lines must be greater than 28

SY106 Error on systemMT processing } See other info for more details, SY011 it is the
} same.
SY107 Error on dfltMT processing } and provide the nn* reference as well to
SY108 Error on sys4MT processing } IT support. Again also see SY011.
SY109 Error on finalMT processing } These should not occur but might indicate lack
} of space on your hard drive.

SY110 Rerun Parameter Set up? Enter Y or N.
SY111 Print Spool Name must be defined
You MUST define these spool names otherwise there will be no printed output produced. Names taken from the CUPS system.
Use url http://localhost:631 to access.

SY902 Program Error: Temp rec = yyy < System-Rec = zzz
This means that the record layout size is wrong in the respective FH (File Handler).
This and other XX902 – 90n is similar but for other records. XX=IR,GL,PL, SL, ST. (Listed later.)

yyy = size of temp record in bytes.
zzz = size of file record. In bytes.

This requires that the source code of the relevant program needs to be changed and re-compiled before using the system.
Report this problem to ACAS support as it is a Critical Programming Error.
Needless to say it should not happen unless you have an old copy of the ACAS sources or more likely, mixed old and new versions together.

Commercial versions only: On later versions this should be removed.
SY044 The system has detected an unauthorised change of user name.
SY045 Contact your Supplier or Sys Admin
Internal company name is not the same as in the parameter file. Check what directory you are running from or have you copied the system.dat file from another company. You cannot continue with ACAS. Report to ACAS Support.

12.4.1. From FH (the Cobol File Handlers)

AC901 Note error and hit return As indicated see the other preceding message.

12.4.2. From DAL (the RDBMS Data Access Layer)

SM901 Note error and hit return As indicated see the other preceding message.
SM004 SQL Err No.= xxxx Serious programming error or mysql server not online, See specifics following text msg.

12.4.3. From FH-and DAL Logger (During Testing only)

FH901 Note error and hit return As indicated see the other preceding message/s.
FH903 Write failure on Log File = nn
No disk space available. Create more free space greater than 256 MB. Other error message can appear.
Also see File Access Error numbers page 90
SM901 Note error and hit return As indicated see the other preceding message/s.

ACAS – The top level master program who's usage is totally optional.
None.

ACAS wide Ledgers Parameter Set up (sys002)

SY005 Invalid Date: dd/mm/ccyy, mm/dd/ccyy or ccyy/mm/dd only.

SY044 The system has detected an unauthorized change of user name:
See ST044.
SY045 Contact your Supplier or Sys Admin: See ST045.

The two message above, will not occur in the Open Source version of ACAS.

SY101 Open I-O Err = nn: Contact IT support and provide nn*.
SY102 Read Err 1 = nn: Contact IT support and provide nn*.
SY103 Rewrite Err 1 = nn: Contact IT support and provide nn*.
SY104 Fix and Press Enter: See previous message.
SY105 Lines > 28 Print lines must be over 28

Note: None of these should occur but see the above note, about correct directory.

12.5. System wide Messages for Stock Control

12.5.1. System wide Stock Control FH (File Handlers)

Common

ST901 Note error and hit return As indicated.

Acas010 FH for the Stock Audit File

ST902 Program Error: Temp rec = yyy < Stock-Audit-Rec = zzz

ST903 Here it can be one of two Stock files and indicates that the size of the temporary record is less than the actual file record size.
The file can be Stock Audit or Temp Stock Audit

This means that the record layout size is wrong in the respective FH (File Handler) and these respectively are acas016, acas010, acas011.

yyy = size of temp record in bytes.
zzz = size of file record. In bytes.

This requires that the source code of the relevant program needs to be changed and re-compiled before using the system.
Report this problem to ACAS support as it is a Critical Programming Error.
Needless to say it should not happen unless you have an old copy of the ACAS sources or

acas011 FH for the Stock File

ST903 Program Error: Temp rec = yyy <StockRec = zzz
See ST902 for information but for the Stock file.

ST904 Start on spaces successful
Message to fh-logger only for success - Info only.

12.5.2. System wide Stock DAL (the RDBMS Data Access Layer)

None.

12.5.3. System wide Stock Messages

ST000 Error on writing to Stock File: Contact IT support.
ST001 System 1 read err = nn: Contact IT support and provide nn*.
ST002 Error on Writing to Audit File: Contact IT support.
ST003 Hit return for menu: See prior message.
ST004 Problem with opening System File. Hit return to clear:
Continue but if it re-occurs contact IT support
ST005 Invalid Date: dd/mm/ccyy, mm/dd/ccyy or ccyy/mm/dd only. i.e, 1/1/2011 it should be 01/01/2011
ST006 Program Arguments limited to two and you have specified n
You have given too many parameters to Stock when a max. of 2 is allowed.
ST007 Program arguments incorrect: Error in one or both parameters to stock

Note: The above errors will usually indicate that you are running ACAS from the wrong directory, e.g., one that you did NOT run set up. Check you are in the correct directory or contact support for help.

ST044 The system has detected an unauthorized change of user name: Contact your supplier or IT Support.

ST045 Contact your supplier or Sys Admin: System file may have been corrupted. See ST044.

Note: Neither 044 or 045 should occur but see the above note, about correct directory. These messages will not appear for Open Source versions.

12.5.4. Specific Stock Messages by Program or program

Stock Control Main Menu (STOCK)

ST403 Sub arg not 1, 2 or 3 — You are using Autorun for st040 and character n in 'stock null st0405n is not a value of 1, 2 or 3, process aborts.

All others are system wide messages and within calls of other modules/programs

Update Today' s Date (ST000)

Only uses system wide messages.

Stock Item Entry (ST010)

ST101 Supplier not found: Supplier not on file.
ST102 Abbreviated Stock number Must be present. You must enter this field.
ST103 Abbreviated Stock number Invalid: Field failed the check digit test.
ST104 Purchase Ledger not yet set up, Aborting Set up first before running stock control.
ST105 Purchase Ledger File not found, Aborting: Fix and rerun or contact support.
ST106 Stock File not found, nothing to do: You tried to run amend/delete/print but there are no records yet, add some first.

ST107 Cannot delete record as non zero values exist: Quantities On-order, Held or Back-ordered do not have zero values.

ST108 Delete failed on Stock File = nn: Contact IT support and provide full message details with nn*.

ST109 Cannot renumber record as order values exist: Wait until stock arrives before changing.
ST110 Cannot find Sales Ledger Analysis Code: This analysis code must be created.

ST111 Cannot find Purchase Ledger Analysis Code:	See ST110, Use Ledger program.
ST112 Analysis File not found, Aborting:	Fix and rerun or contact support.
ST113 Abbreviated Stock Number is already on file:	No duplicate Abbrev. numbers allowed.
ST114 Stock Number not found:	Stock item specified is not in the file.
ST115 Construct Stock Number not found:	Stock item specified is not in the file.
ST116 Stock Number is already on file:	No duplicate Stock numbers allowed.
ST117 Stock Number/Abrev No. is already on file:	No duplicate Abrev numbers allowed.
ST118 Service Flag is set, so unused values cleared:	This item is a Service only, i.e., 'Consultancy', 'Rentals'., etc.
ST119 No more records to display	You have displayed all Stock Items.

Stock Item Additions & Deletions (ST020)

ST201 Stock File not found:	Fix and rerun or contact support.
ST202 Audit File not found:	Fix and rerun or contact support.
ST203 Abbreviated Stock number not present:	This Stock Item not yet on file.
ST204 Quantity cannot equal or exceed 999,999:	Entry would exceed field limit.
ST205 Quantity in Stock cannot exceed 999,999:	Entry would exceed field limit.
ST206 Quantity in Stock cannot be less than zero:	Entry would set value below zero.
ST207 Quantity can only end with space or -:	Use '-' for negative quantity, for backing out a previous entry that is wrong.
ST208 CAUTION: Stock quantity will be zero:	Informational message.
ST209 Stock Value set to Minimum. (Zero):	Informational message. Check why.
ST210 Current Deductions at Zero or < 0:	Informational message.
ST211 To Date Deductions at Zero or < 0:	Informational message.
ST212 Stock Value set to Maximum. (99,999,999.99):	Entry would exceed field limit.
ST213 Bad month in date:	System date has month not in range of 01 through 12. This is a computer error. Report this to IT Support.
ST214 Stock Number not found:	This Stock Item not yet on file.
ST215 Current Additions at Zero or < 0:	Informational message.
ST216 To Date Additions at Zero or < 0:	Informational message.
ST217 Services only Product:	This item does not use various fields as it used in a limited way i.e., Consultancy. Or an extra charge on invoicing etc.
ST218 Services only product so only quantity accepted:	Also see ST217. Some versions, will not allow quantities either for Service items.
ST219 Stock File not yet created	Add stock to continue processing.
SL220 Cannot open BO file	Cannot access the Back Order file.
ST221 Error on Rewrite BO file	As stated, Abort and fix problem.

{ST250} (Order Date) Date error, also see ST005.
{ST251} (Due Date) Date error, also see ST005.

Stock Control Reporting (ST030)

ST300 Stock File not found: Not yet created, add stock items. Use Stock Item Entry (ST010).
ST301 Stock File not found: Fix and rerun or contact support.
ST302 There were no Stock numbers within the specified range:
ST303 There were no Abbrev Stock numbers within the specified range:
ST304 You cannot specify both Stock AND Abbrev numbers: Use only one of the options.
ST305 Abbreviated Stock number not present: This stock number does not exist.
ST306 Stock Number not found: This stock number does not exist.
ST307 Stock From MUST be less than Stock To: As message.
ST308 Abbrev From MUST be less than Abbrev To: As message.
ST309 Location Ignored Count must be less than 9 Must be zero through 8.
ST310 Stock Location not found" As message.
ST311 There were no locations within the specified range When using start and/or end location no records could be found to match the selected criteria.

Stock Reset Period and Year Totals (ST040)

ST401 Stock File not found: Fix and rerun or contact support.
ST402 Y or N only: Enter correct response.

Stock Control File Compression (ST050)

ST501 Stock File not found: Fix and rerun or contact support.
ST502 Y or N only: Enter correct response.
ST503 Error opening temp file: Wrong permissions for file?
ST504 Error writing to temp file: Fix and rerun or contact support.
ST505 Error: Length of Stock File not same as Temp File: System error and should never happen. Program needs to be re-compiled with correct values in temp file description. See next message for more information.
ST506 Error opening Stock File Wrong permissions for file or not enough space on disk. The temporary file has been kept so can be used in recovery mode.

Stock Item File Importer (ST060)

ST601 Error on Open/Reading Import File -	Data not matching up with what is expected or cannot find the file in the ACAS folder.
ST602 Note error and hit return	See prior message.
ST603 Note total and hit return	See prior message.
ST604 Note error and hit return to quit	See prior message.

Message numbers shown above in {} are not displayed.

13. File Access Error numbers

When using Cobol files only

02 Creating a Duplicate key on alternative key which allows duplicate keys.
04 Success (but incomplete)
05 Success (Optional file not found)
06 Multiple records (in LS)
07 Success (No Unit)
10 End of file reached if reading forward or beginning-reached if reading backward
14 Out of key range
21 Key invalid
22 Duplicate key condition when duplicate keys are not permitted,
23 Start/Read has been attempted on an optional input file that is not present.
24 Key boundary violation
30 Permanent I/O error
31 Inconsistent file name
34 Boundary violation
35 File not found
37 Permission denied
38 Closed with lock
39 Conflicting attribute
41 Open has been attempted on an already open file.
42 Close has been attempted on an already closed file.
43 Read not done
44 Record overflow
46 Read error
47 "OPEN INPUT" denied (insufficient permissions to read file)
48 "OPEN OUTPUT" denied (insufficient permissions to write to file)
49 "OPEN I-O" denied (insufficient permissions to read and/or write file)
51 Record locked
52 End of page
57 "LINAGE" specifications invalid
61 File sharing failure
71 Bad Character
91 File not available

Note: There may be others but most if not all are here, see GnuCOBOL Documentation. Most if not all of these indicate a program error and you should report such, giving as much information as possible as to what you were doing at the time in an email to your IT department if it is a missing file or the support email address as shown on inside front page.

Please always remember to provide the software version and name of the program or program that was being run that created or produced the error. Also the platform you are running on such as the operating system and hardware if not Intel or AMD X64 cpu.
The version details take the form of aannn v3.nn.bbbb where (in order)
aa = st = Stock, sl = Sales, pl = Purchase, irs = IRS, gl = General, py = payroll.
nnn = A three digit number from 000 to 999 indicating the program / program name.
v3 = Version of ACAS software
nn = Sub version of the software.

bbbb = Build number of the specific program. This is incremented by 1 for every change.

13.1. RDBMS error codes

Only when using the database system such as Mysql or Mariadb:
Here is the more common errors but there are a lot more see the RDBMS Error messages in the Mysql or Maria systems manuals.

13.2. MySQL SQL Status messages

This is a small selection of what could occur for others again see the Mysql or Mariadb SQL error documentation.
ACAS tries to rely on these more than on errno (Error numbers) below.

Sql-State 00000 = Operation completed successfully
01 = Completed successfully
0200n = No data found one way or another
[fs-reply/we-error] = Get random = 23 else = 10].
23000 = Dup primary key on insert same as fs-reply = 22.
Internal Errors :
99NKS = Invalid key # used.
99NKU = No valid key used.
99NKD = No valid key used for delete
99RNP = Read next with no position (no start 1st)
99GNS = Could not generate a start.

MySQL errno (Error numbers) that can possibly appear via ACAS.
There are many others, again, see the Mysql or Mariadb error documentation.

14. Error Recovery

Many of the error messages in section “System wide Messages” that relate to missing files can be attributed to only a few reasons:

1. You are on the wrong directory before running ACAS, check which one is set in the environment setting for ACAS_LEDGERS= such as /home/username/ACAS.
   You can find this in a terminal by running -
   `set | grep ACAS`
   this should produce something like this :
   ```
   ACAS_BIN=/home/username/bin
   ACAS_LEDGERS=/home/username/ACAS
   ```
   Check that PATH is set and pointed to folder in ACAS_BIN by running:-
   `set | grep PATH`

   So here you should be in the /home/username/ACAS

   Did you log in to the system as the user.

2. The system is corrupted due to a power failure and you are not running your computer on a UPS (Uninterruptible Power Supply). It is seriously advisable to run all business critical computer systems on UPS’s and here we use units of 1000w or larger depending on the need to keep up running times but the 1000w is good enough to finish off current data entry records and then shut down ACAS and then the system before the UPS software (apcupsd) does it. If no other reason then they give smooth power to the equipment at all times.

3. Files have been deleted in error, you may have to recover from the last back up. These sit in a directory in the ACAS directory called temp-backups. Be careful before running a recovery procedure, for example make sure you do a backup of the contents of the directory first, just in case.
   Here is a perfect reason to make a copy of the backups produced by ACAS onto a USB memory stick or hard drive that you only connect prior to doing so, say daily etc. Create a back up strategy for your company if one does not yet exist and stick to it like glue. Remember to test the recovery of a backup in a temporary directory say '/home/username/ACAS/test-a' just for the purpose and test by running ACAS. For this to work you will need to pass the ACAS directory parameter when loading a ACAS sub-system e.g., for sales you would run
   'sales ACAS_LEDGERS=/home/username/ACAS/test-a'.

   WARNING: If you forget to do this, you will be using the data from the standard directory as set up by the install scripts, e.g., /home/username/ACAS.

   If running a RDBMS based system ensure you have set up back ups for it, at least for the ACAS database which by default is called ACASDB but you can change it to anything having made sure it is the same one set up in the ACAS system parameter file. You should do it for all of your databases along with the rdbms system databases, so just back up the lot on a regular basis.

15. Command Summary

Note that these can be slightly different depending on the exact Cobol compiler you use, the operating system and/or your system settings.

Escape:	Ends the current function or program.
Return:	Enters data and advances to next request, accepts default value, moves cursor forward screen fields.
^ (UP ARROW):	Moves cursor back one field.
Page Up:	As above.
(Down ARROW):	Moves cursor forward one field.
Page Down:	As above.
Tab:	Moves cursor right to next field.
Back Tab:	Moves cursor left to previous field.
F1 to F10:	Where used, see specific program or function documentation.

16. File Accessing

Program	system	stock	staudit	analysis	tmp-stock	sales
stock	rw					
st000						
st010		rw		r		r
st020		rw	rw			
st030		r				
st040		rw				
st050		rw			rw	
st060	r	w			++	
sys002	rw*					

st020 also has rw for file bostkitm and this is also processed rw, for sales sl910, sl920 & sl970.

r = Opened for reading
w = Opened for writing
rw = Opened for both reading and writing
rw* = As for rw but can create file as well
++ = Also uses a alien file for import to the ACAS system.
File creation will occur if selected by any program.

17. File Descriptions

Files:

1. System Parameter file (system.dat) – contains four records but only the first one is used in Stock Control, the system parameter record, the others in order are the GL default accounts, final accounts and last is the year end total record for the ACAS system.

2. Stock file (stockctl.dat) also dat.1, dat.2 and dat.3 – One record for each stock item. dat.1, dat.2 & dat.3 contain secondary indexes (Abbreviated no., Description & Location) for the stock file.

3. Audit file (staudit.dat – one record for each stock addition or deduction. Cleared at start of each audit period, i.e., monthly or quarterly, normally monthly, but after producing a full report.

4. Temp Stock file (tmp-stock.dat) – One record per stock item – Only used in st050 to compress the indexed stock file. Can be deleted after *successful* operation but will be zero size if run ends normally.

5. Analysis file (analysis.dat) – Hold Sales and Purchase analysis codes. Created in Sales and Purchase Ledgers respectively by SL070 & PL070 and used by many other programs.

6. Import file from an old stock control system. Used to build the ACAS Stock file, only used with ST060 that MUST be changed to reflect the fields and record format in the imported file.
   This is a one off process, at least, after you have tested it.

7. Back Orders file (bostkitm.dat) also dat.1 and dat.2 - Only used if the BO flag is set in the parameter file under SL along with the BO Default flag for customer records. Used in sl020 and in sl970, sl910.

For up to date file and record layouts refer to the source code.

Note that the system parameter file is used by all of the ACAS main programs e.g., Stock, Sales, Purchase, IRS, General, Invoicing. It is always used even if database is being used such as Mysql, Mariadb etc, as the system must have a way of working out what system is in use, i.e., files or rdbms such as MySQL or MariaDB.

All of the ACAS programs and modules should be kept in the same executable directory, i.e., ~/bin under Linux and where ~ is the users home directory and this directory must be in the search path with the xr attributes. See the install script.

18. Installation of the Cobol Compiler

This block of install and build instructions for both the GnuCOBOL compiler and the ACAS system have now, along with all other ACAS systems been transferred to the manual :
ACAS - Building the ACAS System so that there is one location for such, which will improve support and maintenance of updates.

Another manual currently being written is System Set up Procedures.

It also includes details on :

Bug reporting along with new feature requests.
ACAS used scripts
System Set-ups
System Backups

19. Manual errors or omissions

No manual, much like software is ever bug free, so if you find elements missing or incorrect please report all via the bug reporting tool at the ACAS website on sourceforge.
Remember to specify the manual title and version when doing so, You can also use an email to the address on inside front cover (vbcoen@gmail.com) with the subject of Bug manual etc.

All manuals have been produced using the LibreOffice suite that includes word processing along with all the other tools, similar to the MS (Microsoft) Office suite. The benefit of which is it is free to obtain and use. These word processing files are also included and the format for them is .odt which is in the Open Document format and yes can be read using MS Word but you might well get issues when reading them depending on how efficient MS is with keeping up with updates of format from LibreOffice and you using the later versions of Office.

All ACAS documents use the UK English language (including spellings) but with no guaranty for typo's or missed placed spellings and using A4 paper as that is the universal paper size around the world (OK, may be excluding the USA and some parts of Canada).

That said the manuals should be printable on American sized Letter format paper.

Thank you