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CONTRACT LINE ITEM PRICE
ANALYZER MODEL PROTOTYPE

October 1992

OPERATIONS RESEARCH AND ECONOMIC ANALYSIS OFFICE

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October 1992

Richard M. Silla
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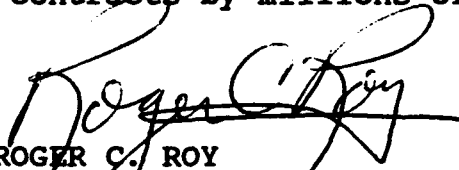


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FOREWORD

The Defense Logistics Agency (DLA) Operations Research and Economic Analysis Office (DORO) has developed the Contract Line Item Price Analyzer (CLIPA), a prototype model to aid price/cost analysts in evaluating multiple line item contract proposals. The model will search the CLIPA Acquisition Management Information System (AMIS) data base and help them find the lowest applicable price paid for an item, and when there is enough historical data, the risk of the proposed price. The improvements in effectiveness due to CLIPA could easily increase government savings on the cost of contracts by millions of dollars annually.


ROGER C. ROY
Assistant Director
Policy and Plans

EXECUTIVE SUMMARY

The Defense Logistics Agency (DLA) Operations Research and Economic Analysis Management Support Office (DORO) has developed a microcomputer model to aid price/cost analysts (pricers) in evaluating multiple line item contract proposals. By using a simple menu, the model aids in: selecting line items to be reviewed, accessing a parts data base, and statistically analyzing the price history. It enables analysts to effectively use price, quantity, delivery date and other information in a special data base. The data base is extracted from the price history part of the Air Force Acquisition Management Information System (AMIS) data base. This Contract Line Item Price Analyzer-Acquisition Management Information System (CLIPA-AMIS) data base contains nearly 2 million buys representing over 900,000 National Stock Numbers (NSNs) and approximately 1,200 Federal Supply Codes (FSCs). The model can identify high cost-risk items in a proposal and reduce the need to research low cost-risk items having less impact. In addition to its analytical functions, CLIPA provides browse, batch input and file maintenance, as well as hard copy reporting features. The model also solves connectivity, access, and response problems that have discouraged pricers from using mainframe data bases.

The CLIPA model is a prototype that is undergoing field-test at Defense Contract Management Area Office (DCMAO) Chicago, and at Defense Plant Representative Office (DPRO) Martin Marietta, Denver, CO. If field tests are successful the model can be implemented without further developmental work. The model has application for a multiuser local area network (LAN), although the prototype is currently set up for the single user LAN mode. (LANs connect microcomputers within a building so they can share data, software, and peripheral equipment.) In either mode, CLIPA will enable the LAN to leverage the large disk drive on its fileserver, since each workstation in the network would not need one.

CLIPA's goal is to help pricers find the lowest applicable price paid for an item and, if possible, compare it to the risk of the proposed price. With this information analysts can make better decisions about price reasonableness. Effective and efficient reviews are important because the total value of Defense Contract Management Command (DCMC) pricing cases is great. In FY 91, 775 DCMC pricers completed 35,483 pricing cases, including 18,255 for preaward surveys (valued at \$90.5 billion) and 17,228 for spare parts (valued at \$4.4 billion). All of the spare parts, and many of the preaward, cases involved tests for price reasonableness. The overall caseload is about 46 cases per analyst per year. The cases had a total value of \$95 billion. In FY 91, recommended savings were about \$8.3 billion, of which \$1.3 billion were from reviewing proposed parts for price reasonableness. With this magnitude of dollars involved, using CLIPA as an analytic tool can increase contract savings dramatically.

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SECTION 1

INTRODUCTION

1.1 BACKGROUND

When contract proposals exceed dollar thresholds in the Federal Acquisition Regulations (FAR), Contracting Officers (COs) request field pricing support. However, when there is not enough information to establish price reasonableness, COs also request field price support for smaller proposals.

1.1.1 CONTRACT PREAWARD COST PRICE ANALYSIS

Procuring Contracting Officers (PCOs) normally request field pricing support for pricing proposals exceeding \$500,000 for fixed-price contracts and \$1 million for cost type contracts. Administrative Contracting Officers (ACOs), however, are required to request pricing support on fixed-price proposals over \$25,000, cost type proposals over \$100,000 and proposals involving significant special tooling or special test equipment.

1.1.2 SPARE PARTS CONTRACT PRICING ANALYSIS

FAR 52.215-26, "Integrity of Unit Prices," requires that any proposal submitted for the negotiation of prices for items of supplies shall distribute costs within contracts on the basis that ensures unit prices are in proportion to the item's base cost. Department of Defense FAR Supplement (DFARS) 215.805-5(c)(iv) says that pricing reports for acquisition of parts or support equipment shall as a minimum include:

- (A) A detailed analysis of each line item identified by the contracting officer in the request;
- (B) A detailed analysis of those line items where a comparison of the item description and the proposed price indicates a potential for overpricing;
- (C) An analysis of the significant high-dollar-value items. If there are no obvious high-dollar-value items, include an analysis of a random sample of items; and
- (D) An analysis of random sample of the remaining low-dollar value items. Sample size may be determined by subjective judgment, e.g., experience with the contractor and reliability of its estimating and accounting systems.

DCMC policy requires pricers to follow FAR 52.215-26 and DFARS 215.805-5(c)(iv). The spare parts guidance also covers the review of bills of material.

Pricers need to use data bases to perform the above analyses. Spare parts proposals may contain hundreds of line items, however. Prior to CLIPA, price history data bases (if they were

available and could be accessed) required pricers to access items one-at-a-time by entering their manufacturer's part number (PN) or National Stock Numbers (NSNs). This was time consuming, and as a result was usually not performed for all items in the proposal. In addition, to review for obvious overpricing, pricers must visually check all items to see that the prices are consistent with perceived value and intended use. Until now it was difficult for pricers to access the price history and technical information to do this.

When an item is selected for detailed analysis, pricers analyze its cost breakdown. This is done using a spreadsheet showing the basic elements of cost (depending on the contractor's accounting system) such as: material, direct labor, indirect costs, royalties, and other costs.

1.2 SCOPE

The CLIPA data base contains nearly 2 million buys representing over 900,000 NSNs and approximately 1,200 FSCs. The data was obtained from the Enhanced Price History Data Base of the Air Force Acquisition Management Information System (AMIS). Most of the items in the data base are in aircraft, missile and related FSCs. As a result they tend to be significantly more costly than those in most other FSCs. Since the prototype data base is concentrated in this area, it will be more useful to Defense Plant Representative Office (DPROs) and Defense Contract Management Area Office (DCMAOs) dealing with contractors in this area. AMIS data was chosen for CLIPA to prove the technological feasibility of the concept and because it is useful to pricers.

The data base can be reduced in size by eliminating outdated information. However, since we expect to add other data bases we did not try to do this for the prototype.

DORO did not design CLIPA for use on a Local Area Network (LAN). However, it can be set up on a LAN, without modification, in a mode that will allow it to serve one user at a time (no filesharing). DORO will not modify CLIPA for LAN filesharing until results from field tests are obtained. Standards and mechanisms for electronic receipt, from contractors, of line item (pricing) contract data, was not included in this project.

DORO is continuing to try to obtain additional data from AMIS, including free on board (FOB) terms (origin versus destination) and associated transportation costs.

1.3 OBJECTIVE

The goal is to help pricers find the lowest price paid for an item. CLIPA will also furnish a risk factor for proposed item price when historical data is available. This information will enable pricers to make more informed decisions regarding price reasonableness. Pricers have a heavy caseload combined with a 30 or 45 day deadline, and regulatory requirements for detailed

analysis. Therefore, to effectively evaluate a price requires easy access to historical pricing data. Information is available from mainframe data bases, through microcomputers with modems, or by dial-up connection to a national telecommunications network. Analysts must sign on to such a data base and ask for data on an item by item basis. Typically, these systems are not designed for price analysts. They contain technical information for many areas that analysts must sift through to pull out pricing data. Consequently, dial-up data bases have many disadvantages, especially for pricers. Querying these systems is time consuming. Connectivity is a problem, since there are so many places in the hookup for equipment or line failures. Recent software advances have eased the problem somewhat. Dialup data bases are seldom user friendly and continue to be frustrating to use.

SECTION 2

METHODOLOGY

The first phase of this project identified the basic problem and established the feasibility of the approach.

CLIPA has two components: the price history portion of the AMIS data base, and a model to search for and analyze buy histories. The appendix to this document is a user's guide.

2.1 THE CLIPA DATA BASE

Emerging technology now enables mass storage of data at the workstation. Single magnetic hard disks can store over 1,000 million characters (1,000 megabytes) of information. Microcomputers can very quickly access this data. The CLIPA project builds its data base using the pricing part of AMIS. It resides on a 340 megabyte or larger microcomputer hard disk and is indexed for rapid retrieval (including batch) of data. CLIPA response time is less than 2 seconds on 80386 compatible microcomputers. Until now, on-line mainframe inquiries have been one-at-a-time, much slower, and more difficult.

As AMIS receives new acquisition data, the CLIPA-AMIS data base will be updated (probably quarterly). To get this production data from AMIS on a continuing basis, DLA will enter into an Interservice Support Agreement (ISA) with the Air Force. (The project has not yet selected the medium for distributing the update data to the CLIPA sites.) AMIS will not continue as a contract management system, however, its contract management functions will be merged into MOCAS.

2.2 THE CLIPA MODEL

A simple menu operates the CLIPA model. The key selection is "Price Inquiry and Analysis." (Other menu selections enable batch file input, processing and maintenance.) The Price Inquiry and Analysis function is used to:

- Retrieve and display the NSN buy history.
- Browse the data base by either NSN or part number.
- Perform an analysis of the NSN buy history to determine the risk of a proposed price.
- Print a detailed report of the NSN buy history.

The "Price Inquiry and Analysis" display screen is designed to include all key analysis and data in a visually attractive format. (If the number of buys for an item does not fit on this screen, the user simply scrolls to see the remaining buys.)

Help is available from every screen by pressing a function key.

2.2.1

INFLATION RATES

Analysts can choose from many stored tables of inflation rate histories. Each table corresponds to the inflation history for one or more classes of items. CLIPA applies the inflation tables to the buys in the data base to adjust the historical prices for the impact of inflation up to the appropriate date in the proposed contract. Analysts can also change rates in the table, or supply their own inflation rate table. (The pricing history part of the data base is protected so that pricers cannot change it inadvertently.)

2.2.2

RISK ANALYSIS

CLIPA performs a risk analysis on the proposed price. It is meant to be a rule-of-thumb that will help decide whether a detailed analysis (cost breakdown by element for the item) or other investigative action is needed. In many cases it can serve as an effective screen to identify line items that do not warrant further action, as well as those that do. CLIPA indicates the risk (chance) that the proposed price is too high. To do this it infers whether the proposed price is taken from the same population of prices as the historical buys. It does this by computing the mean and standard deviation for the historical buys, as well as the difference between the mean and proposed price. Then it uses the standard deviation and the price difference to find the chance (in statistical tables of the Normal distribution) that the difference is significant.

Sometimes there are too few buys to make a statistical inference. Still, as long as there is a useable buy history, judgments about risk can be made without the statistical inference. The automatic statistical inference will be a time-saver when there are many line items in the proposed contract and each line item has many historical buys in the data base.

CLIPA indicates risk as follows:

LOW RISK - If (by inference from standard statistical tables of the Normal distribution) fewer than 16 percent of the historical prices are higher than the mean price plus the difference between the mean and proposed price.

MEDIUM RISK - If proposed price is more than the low risk cutoff, but less than the high risk (see below) cutoff.

HIGH RISK - If fewer than 2.3 percent of the historical prices are higher than the mean price plus twice the difference between the mean and proposed price.

EXCEEDS 25 PERCENT - If the proposed price exceeds the lowest price paid within the last year by 25 percent (this overrides any low, medium or high risk indication).

Obviously, the data base **may not include all buys** for an item. (A buy could have been made by an activity not using AMIS.) As a result, those DPROs who maintain small local price history data bases, for their contractor, should continue to search those data bases. They may have items or buys not included in CLIPA-AMIS. If they do, the additional data will help to further test price reasonableness. Also, this data could **possibly** include a historical buy that enables the proposed price to satisfy the 12 month - 25% constraint.

The calculation of risk does not take into account the buy quantities. In part, this is because it has not yet been possible to identify price-quantity relationships (see section 2.2.4 below). This underscores the need to use the risk calculation as a rule-of-thumb. On the other hand, the **current** risk criteria, the 12 month - 25% increase test in DFARS 215.805-5(c)(1)(s-71) **also** does not take into account quantity differences. That is, it does not require pricers to compare buys having like quantities or to make some kind of quantity adjustment when they are doing the test.

2.2.3 SENSITIVITY ANALYSIS

Analysts may find that some buys in the history are unusual compared to others (because of either their quantity, price or delivery date), and should not be included in the analysis. By marking these buys on the screen they can have the model recalculate the risk level without them.

2.2.4 PRICE-QUANTITY RELATIONSHIP NOT IDENTIFIED

CLIPA does not consider any price-quantity relationship, even though contractors often offer quantity discounts. This project used the information in the CLIPA-AMIS data base to look for a price-quantity relationship in a typical Federal Supply Class. Such a relationship was not found. If they exist, they are different for each vendor, rather than each supply class. We are not sure that we will be able to identify specific vendor relationships or that it will be practical to store them in the data base. However, if one or more valid specific relationships within a supply class **could** be identified, pricers might be able to apply them to other vendors in the supply class. Accordingly, this infers that these other vendors are capable of profitably offering the same discount. Such an inference is really only a **very** limited extension of the concept that they could offer the same **price**. After all, this is the basis of the current methodology anyway. If CLIPA is approved for Defense Contract Management Command (DCMC)-wide implementation as we expect, we suggest that this subject become a short, separate study.

However, since CLIPA offers enormous benefits without price-quantity relationships, it should be put to use as is. For now, pricers will have to use their experience with the FSC, or item, to estimate the relationship.

SECTION 3

CONCLUSIONS

There are two types of alternatives for reducing pricing case workload: avoid the work, for example, by changing thresholds for performing cases, or do the work more effectively using efficient data base searches and analytical modeling. More effective means of price analyses have benefit in that contractors will submit more realistic proposals.

3.1

BENEFITS

CLIPA provides easy access, not previously possible, to historical pricing data. The model saves time and makes analyzing cost proposals simple. It uses mathematical models to screen data for comparable item costs, and test the proposed costs for reasonableness. Pricers will make better decisions regarding price reasonableness. The analyses will be more informative and provide documentation. The model will serve as a tool during negotiations and in discussing price changes.

All spare parts pricing cases and some preaward pricing cases test price reasonableness. Preawards also analyze the contractor's financial capability to produce based on financial ratio analyses and/or cash flow analysis. As a result, CLIPA could potentially be used for 17,000 pricing cases per year. Ultimately, the actual number would depend on how often proposed NSNs are found in the CLIPA-AMIS data base (and other data bases that can be added). Based on our estimates, price reasonableness type analyses have recommended savings of about \$1.3 billion. Rapid access to pricing histories (those in AMIS and others), and the use of the analytical models, can result in improving recommended savings. We conservatively estimate the potential increase at 5 percent, or \$65 million. To be further conservative, by assuming DLA-wide implementation is not immediate, we estimate the first year savings at 10 percent of this amount, or \$6.5 million.

This model will be made available to procurement activities outside DLA.

3.2

STATUS OF PROTOTYPE

CLIPA is undergoing field test at DCMAO Chicago and DPRO Martin Marietta, Denver, CO. We are seeking sites to expand the field test to include several DPROs, especially some that were formerly Air Force DPROs. Expanding the field test is important for two reasons. First, some DPROs (and DCMAOs) may deal with NSNs in the CLIPA-AMIS data base much more frequently than others, while other activities probably will not use the data at all. Second, for activities that could use the data, timing of proposals can negate usefulness. To measure the results of the test, the prototype will internally track both the total number

of inquiries and the number of inquiries that were successfully found in the data base. If field tests are successful CLIPA can be implemented without any further developmental work.

3.2.1 AMIS FOB AND TRANSPORTATION COST DATA

It was not possible to get AMIS FOB and transportation cost data at the time the other pricing data was obtained. Efforts to get it are continuing. This data is highly desirable, however the model can be used without it.

3.2.2 LAN APPLICATION

The technological landscape of DLA is changing. For example, LANs have been, and continue to be installed. CLIPA is an excellent application for a multi-user LAN, although the current version will only run on LANs in a single-user mode. The model can leverage the large disk drive on the LAN fileserver since each network user does not need one. Also, CLIPA does not involve any special software purchases or licensing agreements. Having the data base on LANs will facilitate updates.

3.3 FOLLOW-ON DEVELOPMENT WORK

3.3.1 LAN VERSION DEVELOPMENT

Because a multi-user LAN version of CLIPA offers excellent opportunities, development of such a version should be undertaken upon successful completion of the field test. The estimate for this development work is one staff-month.

3.3.2 OTHER PRICING DATA BASES

CLIPA can be used with other data bases. If buy histories in other DoD-wide data bases have adequate pricing data, it is possible to add them to the existing CLIPA-AMIS data base.

The feasibility of adding existing local DPRO data bases to CLIPA-AMIS at the DPRO should be reviewed. An example of this is adding a local DPRO Raytheon data base to CLIPA-AMIS at Raytheon. Such a measure, though limited would be helpful. Obviously, if feasible, a more desirable approach would be to add all such local data bases. This would capture already existing price history data. Therefore this would be extremely useful (even if in the future DoD could implement an ideal pricing data base that began tracking data for all buys at all Government activities).

SECTION 4

RECOMMENDATIONS

We recommend that upon successful completion of the field test, CLIPA is installed DCMC-wide and made available to pricing. In addition to pricers, it should be available to ACOs. ACOs could use it on proposals lower than the thresholds (when performing analyses is discretionary), in lieu of requesting assistance from pricers.

The model is an ideal application for LANs. Where possible, the model should be installed on LAN file servers since they are now being put in place.

Pricers can easily learn CLIPA in about one hour. However, in order to take full advantage of the capabilities and features of the model several people in each district should be formally trained. These pricers can then train the remaining pricers in their districts.

The model, and methodology, may also be used for supply center data if the supply center data base is substituted for the CLIPA-AMIS data base.

DCMC should sponsor a follow-on project to locate other DoD data bases that could be added to the prototype data base.

APPENDIX

**CONTRACT LINE ITEM PRICE ANALYZER
CLIPA
USERS GUIDE**

DCMR-93-P00002

Contract Line Item Price Analyzer
CLIPA
Users Guide

March 1992

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SECTION 1 GETTING STARTED

CLIPA is an interactive microcomputer model designed to provide fast access to the pricing history of many products purchased by the U.S. Government. Its primary function is to analyze buy histories retrieved from an extensive data base of pricing information. In addition, CLIPA provides hardcopy reporting, browse, and analytical functions, as well as batch input and file maintenance features.

The CLIPA database contains nearly 2 million line items of buy history, representing over 900,000 National Stock Numbers (NSNs) and approximately 1,200 Federal Supply Codes (FSCs). The data was obtained from the Enhanced Price History Data Base of the Acquisition Management Information Systems (AMIS).

All functions in CLIPA are selected from a *Main Menu*. Each option of the *Main Menu* corresponds to one of the sections in this guide. Reference is made to related topics as they apply. Sections 2 through 5 summarize the procedures on how to interactively query the database. Read these sections first and refer to other sections as necessary.

If you experience file access errors while using CLIPA, check to see that the directory paths to the database files conform to your system's configuration. This should be done during installation. Refer to Section 10, File Specifications, for information.

To start CLIPA, change to the CLIPA directory, and type:

CLIPA [ENTER]

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SECTION 2 CLIPA OVERVIEW

This section describes the basic structure of the CLIPA data base, and how the search and retrieval process is done.

The CLIPA database has two files: the pricing history file, referred to in this text as the history file; and the part-number/NSN cross-reference file, referred to as the part number file.

The history file is the primary data file, and contains a detailed buy history of all items in the database (see Appendix C for a list of CLIPA data elements). The part number file only contains part numbers, FSCMs, and NSNs, and does not contain buy history information. It is used to cross-reference part numbers with their assigned NSNs. The history file is sequenced by NSN; the part number file by part number and FSCM.

CLIPA reports all buy history information by NSN. However, retrieval can be requested by either NSN or part number. The following rules govern the search and retrieval process, and also serve as guidelines for browsing the database files manually:

- If retrieval is requested by NSN, CLIPA searches the history file directly, and retrieves the buy history of the requested NSN. If multiple part numbers are assigned to the same NSN (as is often the case), then all part numbers assigned to the NSN are retrieved.
- If retrieval is requested by part number, CLIPA first searches the part number file to find the NSN assigned to the requested part number, and then uses the NSN to search the history file and retrieve the buy history of the NSN. If part numbers other than the requested part number are also assigned to the NSN, then they are retrieved along with the requested part number.
- If retrieval is requested by part number, and more than one NSN is found assigned to the requested part number, then only the first occurrence of the NSN is used to search the history file and retrieve the buy history. In addition, a screen message is issued to indicate multiple NSNs were found for the requested part number - a warning that the selected NSN may not be the desired NSN, and that another search may be necessary.

Multiple NSNs can occur for two reasons. First, it is not uncommon for two or more manufacturers to use the same part number, so each instance identifies a different type of product. For example, the part number "345" may refer to a circuit board in one manufacturer's inventory. In another manufacturer's inventory, it may refer to a box of file folders. Part number "345" would then be assigned to the NSN for both circuit boards and file folders, resulting in multiple NSN assignments. If you request part number "345",

CLIPA cannot determine if you are looking for circuit boards or file folders. Only the history of the first NSN encountered (e.g., the NSN for circuit boards) is retrieved, and CLIPA indicates there is at least one other NSN that was not selected.

Second, multiple NSNs may be the result of errors in the data.

In either case, one way to help determine a unique NSN is to supply the FSCM in addition to the part number. The Federal Supply Code for Manufacturers (FSCM) refers to a specific manufacturer, and only the NSN assigned to the part number for that manufacturer is selected. If the FSCM is unknown, or multiple NSNs still occur because of data errors, then the browse function is used to locate the desired NSN. This is the recommended procedure for most cases. See Section 4.6, Using the Browse Function, for further information.

Here are some suggestions which may make your work a little easier:

- If both NSNs and part numbers are available, it is usually easier (and faster) to browse and retrieve by NSN.
- If you are working with a list of several NSNs (or part numbers), use the browse function, preferably after sorting the list first. This allows you to work your way through the items in the list and process each NSN (or part number) as it is found, without typing the complete values in manually. This method also makes it easy to spot multiple NSNs.
- If you are working with part numbers, it is not necessary to supply the FSCM manually. Instead, let CLIPA detect and report any duplicate NSNs, and then use the browse function to determine the desired NSN.

SECTION 3 MAIN MENU

When CLIPA is started, the Main Menu is the first screen to appear. This is the only menu in CLIPA. Each of the menu options is summarized below. To select an option, use the up and down arrow keys to position the pointer in front of your choice, and press **ENTER**.

```
----- Main Menu -----
|
|      > Price Inquiry and Analysis
|          Batch Input
|          Batch File Processing
|          Batch File Maintenance
|          File Specifications
|          Exit to DOS
|
|-----|
| Arrow keys to move pointer  <ENTER> to select |
|-----|
```

Press F1 for Help

PriceInquiryand Analysis

This is the main feature of CLIPA. Select this to interactively query the data base, display and print price history information, browse the data base, and perform data analysis.

BatchInput

Input and save data selection and retrieval information for batch processing at a later time.

Batch File Processing

Process a batch file (or files) from above, generating a price history report for each NSN.

Batch File Maintenance

List, delete, pack, copy, and rename batch files.

FileSpecifications

Specify pathnames to CLIPA database files and batch files.

Exit to DOS

Exit CLIPA and return to DOS.

Help is available on every CLIPA screen by pressing F1.

SECTION 4 PRICE INQUIRY AND ANALYSIS

4.1 INTRODUCTION

Price Inquiry and Analysis is the first option on the *Main Menu* and is the main feature of CLIPA. With this function you can:

- Retrieve and display the buy history of an NSN.
- Browse the database by either NSN or part number.
- Perform an analysis of the buy history of an NSN, in order to determine the risk level of a proposed purchase price.
- Print a detailed report on the buy history of an NSN.

When **Price Inquiry and Analysis** is selected, the first screen to appear is the *Selection Criteria* screen. This screen is used to initiate retrieval requests, and to invoke the browse function. Either the NSN or the part number is required for retrieval requests, but not both. All other items are optional. If left blank, either default values are given or they remain unused. To request retrieval, supply all desired information, then press **HOME** to process the request. To browse the database, you do not need to supply any items.

The following sections discuss specific topics in detail. Again, **Help** is always available by pressing **F1**.

4.2 FIELDS ON THE Selection Criteria SCREEN

The following paragraphs briefly describe the items on the *Selection Criteria* screen and how they are used:

NSN (National Stock Number) - This field is used to request price history data by NSN, and to browse the history file. If used for data retrieval, all 13 characters must be present. If used for browse, partial entries are allowed. Do not use special characters or embedded spaces.

Part Number - This field is used to request price history data by a manufacturer's part number, and to browse the part number file. Partial entries are allowed to either retrieve or browse. Do not use special characters or embedded spaces.

FSCN (Federal Supply Code for Manufacturers) - This field is used with the part number (above) to further help identify a part number used by a specific manufacturer. If used, all five characters must be present. Do not use special characters or embedded spaces. The FSCM is sometimes referred to as the CAGE code.

Delivery date - This is the proposed delivery date of the product in question. The format is a two-digit month, followed by the last two digits of the year (that is, MMY format). The months January through September must be input as 01 through 09, respectively (i.e., the leading zero must be present). The delivery date cannot precede the current date. If the two-digit year is prior to the current year, the next century is assumed. For example, 1005 is interpreted as October, 2005, since the two-digit year (05) is prior to the current two-digit year (92). If this field is left blank, the current month and year are assumed. The delivery date may not exceed the current date by 30 years or more. Below are some examples:

<u>Input as:</u>	<u>Interpreted as:</u>
0795	July, 1995 (valid)
0410	April, 2010 (valid)
1040	October, 2040 (invalid - exceeds 30 years)
Blank	Today's date (valid)

Proposed price - This is the proposed unit price of the item in question. It is compared to the buy history of the item to help determine the risk level of the proposed purchase. This is a dollar and cents field. If present, only numeric digits and a decimal point are allowed. If left blank, no attempt is made to determine risk level.

FOB - This field is reserved for future use. Version 1 of CLIPA is not affected by this particular field.

Quantity - This field is for information only. It is used to indicate the quantity of items in the proposed purchase, and appears on printed reports. Computations are not used within this field. All computations are based on unit price.

Inflation table - The inflation rate table is used to calculate the effective price of an item at the proposed delivery date. This calculation is based on the historical unit price. Use the left or right arrow keys to select an inflation rate table. The selected table remains in effect until it is changed. When this option is started, a default table is assigned. CLIPA provides several inflation rate tables that may be changed as necessary or desired. You may also add your own inflation rate tables at any time. Appendix A contains instructions for doing this. Individual inflation rates may be temporarily changed during a "recalc" session, which can be done following the retrieval of the buy history of an item. Refer to Section 6, Recalculation Sessions, for further information.

4.3

SPECIAL KEYS ON THE Selection Criteria SCREEN

The following function keys are active when specifying selection criteria:

- ESC - Exits and returns you to the *Main Menu*.
- F1 - Invokes help (although not explicitly stated, F1 is available on all screens).
- F2 - Invokes browse (see Section 4.6, Using the Browse Function).
- F3 - Redisplays the output screen after a retrieval. This allows you to swap among the output display, browse, and *Selection Criteria* screens without losing the results of the last retrieval.
- F4 - Clears all fields on the *Selection Criteria* screen, except for the inflation rate table.
- HOME - Initiates the data retrieval process.

Use the ENTER, TAB, and Up/Down arrow keys to step through the prompts.

Use the BACKSPACE and DEL (delete) keys to erase characters in a field.

Use the INS (insert) key to insert characters in a field.

Use the Left/Right arrow keys to move within a field.

4.4

SPECIFYING DATA RETRIEVAL CRITERIA

This section describes how to specify selection criteria. It also focuses on the *NSN*, *Part number*, and *FSCM* fields of the *Selection Criteria* screen. The next section describes how the remaining fields are used in retrieval and analysis.

Most of the items on the *Selection Criteria* screen are optional. Blank entries are supplied default values. Specify as many fields as is necessary or desired, then press HOME to initiate the retrieval process. No action is taken until HOME is pressed.

You can retrieve the buy history of a product by specifying either the NSN or the part number. To retrieve by NSN, enter all 13 characters of the NSN in the *NSN* field. To retrieve by part number, leave the *NSN* field blank, and enter the part number in the *Part number* field. When retrieving by part number, the *NSN* field must be left blank. CLIPA always retrieves by NSN if there is an entry in the *NSN* field. In other words, if both the *NSN* and *Part number* fields have entries, retrieval is done by NSN. The NSN has priority.

If retrieval is requested by part number, CLIPA finds the NSN assigned to the part number (if it exists), and inserts the NSN in the *NSN* field upon return to the *Selection Criteria* screen. If you wish to do a later retrieval by part number, you must first erase the new NSN entry. If the new NSN entry is not erased, the next retrieval will be done by NSN, and the part number will be ignored.

When specifying either the NSN or part number, only use the numeric digits 0 through 9 and the alphabetic characters A through Z. Uppercase and lowercase

letters are equivalent; the case does not matter. Do not use special characters or embedded spaces. For example, part number A33N-16 should be entered as A33N16. Many manufacturers use special characters (particularly the hyphen) in their part numbers, but special characters are not used in the database files.

When retrieval is requested by part number, you can optionally specify an FSCM. An FSCM refers to a specific manufacturer, and can further help identify a product. Remember, the same part number can refer to different products (and consequently to different NSNs), depending on the manufacturer. The FSCM is only used in conjunction with the part number, and, like the part number, it is ignored when retrieval is requested by NSN.

If retrieval is requested by part number (and optionally FSCM), CLIPA first searches the part number file to find the NSN assigned to the requested part number. Then CLIPA uses the NSN to search the history file and retrieve the buy history. If multiple NSNs are found for the part number, only the first NSN encountered is used, and a message is issued on the output screen indicating duplicate NSNs were found. When this occurs, the recommended procedure is to alternately browse the part number file and the history file to determine the correct NSN. See Section 4.6, Using the Browse Function, and Section 5, Interpreting the Output Display, for a further explanation.

The next section describes how the remaining fields on the *Selection Criteria* screen effect data retrieval and analysis.

4.5 SPECIFYING OTHER RETRIEVAL INFORMATION

This section describes the rules governing the *Delivery date*, *Proposed price*, *Quantity*, and *Inflation table* fields on the *Selection Criteria* screen. The *FOB* field is reserved for future use, and is not used in Version 1 of CLIPA.

The *Delivery date* is the expected delivery date (month and year) of the proposed purchase. The format is a two-character numeric month followed by the last two digits of the year. The months January through September must be denoted as 01 through 09, respectively (that is, the leading 0 must be present). If the two-digit year is less than the two ending digits of the current year, then the next century is assumed. For example, a delivery date of 0510 is interpreted as May, 2010, since the two-digit year (10) is less than the two ending digits of the current year (92). If this field is left blank, the current month and year are assumed.

The *Proposed price*, if present, is used to help determine the risk level of the proposed purchase. This is a dollar and cents field. Only use numeric digits and (optionally) a decimal point. Do not use dollar signs, commas, or any other special characters. If this field is left blank, a determination of risk level is not made.

The *Quantity* is an informational item that is carried through to output displays and printed reports. It is not used for any other purpose in Version 1 of CLIPA. All computations are based on unit price.

The *Inflation* table is used to compute the expected values of historical unit prices at the proposed delivery date. Several tables are provided with CLIPA. Use the left or right arrow keys to select a table. You may temporarily change individual rates and recompute inflated prices after retrieval. See Section 6, Recalculation Sessions, for information. Also, see Appendix A for information on maintaining and modifying inflation rate tables.

4.6 USING THE BROWSE FUNCTION

The browse function may be used to:

- browse either the history file or the part number file.
- select a key field from the part number file and transfer to the history file, positioned at the selected key.
- select a key field from the history file and transfer to the part number file, positioned at the selected key.
- select key fields from either the history file or the part number file and return the values to the Selection Criteria screen.

The browse function is invoked from the *Selection Criteria* screen.

To browse the history file, move the cursor to the *NSN* field, and press F2. If the *NSN* field is blank, the history file is positioned at the top of file. If the *NSN* field contains an entry, the history file is positioned at the first *NSN* equal to or greater than the entry. Partial entries are allowed. As an example, if the *NSN* field contains the entry "1260", then the history file is positioned at the first *NSN* whose first four characters are equal to or greater than "1260".

To browse the part number file, move the cursor to the *Part number* field, and press F2. If the *Part number* field is blank, the part number file is positioned at the top of file. If the *Part number* field contains an entry, the part number file is positioned at the first part number equal to or greater than the entry. Suppose, for example, that the *Part number* field contains the entry "A5". The part number file is then positioned at the first part number whose first two characters are equal to or greater than "A5".

If the *FSCN* field contains an entry, it is used as a secondary key to find the starting position in the part number file only. It is not used to find the starting position in the history file.

While browsing either file, use the following keys to navigate:

Up/Down arrow keys move up or down one record at a time.

PgUp or PgDn moves up or down one screen at a time.

Ctrl-PgUp goes to the top of the file.

Ctrl-PgDn goes to the bottom of the file.

The data entry field denoted by "<< Locate" in the lower left-hand corner of the browse display screen is used to position the file at a new record. The new record is the first record whose key is equal to or greater than the entry in the field. Type in the desired entry, then press ENTER. CLIPA allows partial entries.

While browsing the history file, use the F9 key to toggle between a full record display and a partial record display. On a full record display, an additional line is used for each record to display the remaining data items. Also, a second line of column headings is displayed, and corresponds to the second line of data elements of each record. The F9 key is not active in the part number file, as the entire record fits on a single line.

When browsing either file, the NSN, Part number, and FSCM fields of the topmost record are highlighted. If you press the HOME key, you return to the Selection Criteria screen. The values of the highlighted fields on the browse screen are then selected. They are inserted into their respective fields in the Selection Criteria screen, as if you typed them in directly. You can use this feature to save typing in NSN, part number, and FSCM codes for retrieval. Note that this erases any values which were there previously.

You can transfer between the history file and the part number file by using the F2 key from within browse. If you press F2 from the history file, you are transferred to the part number file. You are positioned at the first occurrence of the part number which was highlighted in the history file. Similarly, if you press F2 from the part number file, you are transferred to the history file. You are positioned at the first occurrence of the NSN which was highlighted in the part number file. Note that if you transfer from one file to the other, and then immediately return to the previous file, you may not be positioned at the same record from which you started, because of duplicate keys. For example, if you are positioned at part number "A200" in the part number file and then transfer to the history file, you are positioned at the first occurrence of its assigned NSN in the history file. The first occurrence of the NSN in the history file may contain a different part number (e.g., "S5121") since multiple part numbers can be assigned to the same NSN. If you immediately return to the part number file, you are positioned at the first occurrence of part number "S5121", and not the original part number "A200".

Refer to Appendix C for a description of the column headings on the history file and the part number file browse screens.

SECTION 5
INTERPRETING THE OUTPUT DISPLAY

NSN: 3050125672673		NOMENCLATURE: INDICATOR		(others) FOB: ALL	
QTY:	10	PROPOSED PRICE: 900.00		DELIVERY DATE: 0192	
LINE ITEMS FOUND: 13		Multiple NSNs were found - use browse			

PART NUMBER	CAGE	UNIT-PRICE	INF-PRICE	QUANTITY	DATE F U/I
FA20264	43557	535.69	656.78	55	8701 EA
FA20264	43577	580.77	730.14	35	8607 EA
FA20264		513.36	667.01	11	8511 EA
FA20264	43557	844.00	1,147.67	9	8412 EA
7732216	64421	701.77	1,011.46	7	8310 EA
FA20264		645.97	938.88	9	8308 EA
NOT ASSIGNED		1,105.00	1,626.19	3	8305 EA
* NOT ASSIGNED		1,105.00		1	8110 EA
* NOT ASSIGNED		1,105.00		1	8110 EA
* NOT ASSIGNED		1,105.00		1	8110 EA

- ... More ...					
		1992 4.2%	1987 5.1%	Total Quantity 129	
INFLATION		1991 3.8%	1986 5.1%	Average Price 968.31	
RATES		1990 1.8%	1985 5.1%	Weighted Avg Price 773.28	
		1989 5.1%	1984 5.1%	Median Price 938.88	
		1988 5.1%	1983 5.1%	Standard Deviation 344.54	
				Risk Level LOW RISK	
Producer Price Index (Industrial Comm)		----->			

Sample Output Screen Display

5.1

GENERAL REMARKS

The output screen display for the Price Inquiry and Analysis function is divided into four sections (see the figure above). The top section contains general selection and retrieval information. The middle section contains the buy history. The lower left-hand section shows the inflation rates used in the computations. The lower right-hand section shows the analyzed results. Each is described in detail below.

The following keys are active on the output display screen:

- ESC - Exits to the Selection Criteria screen.
- F1 - Invokes help.
- F7 - Prints a report on the current retrieval.
- F9 - Toggles between a partial (one line per item) and full (two lines per item) record display.

TAB - Begins/continues a "recalc" session.
HOME - Processes/ends a "recalc" session.

The Up/Down arrow keys are used to scroll the buy history area, and to navigate through various fields during a "recalc" session.

If you press **ESC** to exit to the Selection Criteria screen, you can return to the output display by pressing **F3** (Redisplay). Current information will not be lost.

You can only print from the output display screen, not from the Selection Criteria screen. Also, you can only print before or after a "recalc" session, not during. If the record display is partial, the print is partial; otherwise, the print is full. See Section 5.7, Printed Output, below.

5.2 TOP SECTION - RETRIEVAL INFORMATION

The **NSN** field contains the NSN requested on the Selection Criteria screen. If the retrieval request was made by part number, then this field contains the first occurrence of the NSN assigned to the part number. If multiple NSNs were found assigned to the part number, then the message "Multiple NSNs were found - use browse" is issued, and a tone sounds. The recommended procedure in this case is to browse the database files to determine if the desired NSN was selected. To do so, press **ESC** to return to the Selection Criteria screen. Position the cursor over the Part number field and press **F2** to browse the part number file. The part number file is positioned at the requested part number. You can then work back and forth between the part number file and the history file to determine the desired NSN. See Section 4.6, Using the Browse Function, for details on using browse.

The **NOMENCLATURE** field contains a brief description of the NSN. If a description is not found in the data base, the **NOMENCLATURE** field will be blank. If multiple descriptions are found, only the first occurrence is shown, and "(others)" is displayed following the description. Duplicate nomenclatures are usually due to variations in spelling and abbreviating. You can browse the history file to find out for sure. To do so, press **ESC** to return to the Selection Criteria screen. Position the cursor over the **NSN** field and press **F2** to browse the history file. The file is positioned at the requested NSN. To return to the output display screen, press **ESC** to exit browse, then press **F3** to redisplay the output screen.

The **FOB** field is reserved for future use. Version 1 of CLIPA displays the word "ALL" in this field.

The **QTY** field is an informational item showing the quantity which was input on the Selection Criteria screen. If there was not any quantity input, this field is left blank.

The **PROPOSED PRICE** field shows the proposed unit purchase price which was input on the **Selection Criteria** screen. If present, it is used to help determine the risk level of the proposed purchase. If a purchase price was not input, this field is left blank, and there is not any determination made for risk level.

The **DELIVERY DATE** field shows the expected delivery date of the proposed purchase in MMY format, as input on the **Selection Criteria** screen. If there was not a delivery date input, the value defaults to the current month and year. This date is used in selecting inflation rates and calculating inflated unit prices. See Section 5.4, Lower-left Section - Inflation Rates, below.

The **LINE ITEMS FOUND** field shows the total number of line items of buy history found for this NSN.

5.3 MIDDLE SECTION - BUY HISTORY

The buy history area contains the purchase occurrences found for this NSN. If there are not any buys found, the message "No records met the selection criteria" is displayed. If the number of buys exceeds screen capacity, the message "More" appears in the lower left-hand corner of the area. If this occurs, use the up and down arrow keys to scroll through the display.

The values in the **PART NUMBER**, **FSCN**, **UNIT-PRICE**, **QUANTITY**, **DATE** (delivery date in MMY format), and **U/I** (unit of issue) fields are taken directly from the history file. The values in the **INF-PRICE** (inflation price) field are the expected unit prices at the delivery date. They are computed from the historical unit prices and the inflation rates in the lower left-hand section. Inflation prices are only computed for buys whose (historical) delivery date precedes the proposed delivery date by less than ten years.

An asterisk (*) indicates that the buy is not used in any computations. This is due to either missing or incomplete data, or if the proposed delivery date exceeds the (historical) delivery date by ten years or more.

See Section 6, Recalculation Sessions, for information on removing line items from computations and changing individual inflation rates, or press F1 for help.

5.4 LOWER-LEFT SECTION - INFLATION RATES

This area indicates which inflation rate table was selected on the **Selection Criteria** screen, and lists the inflation rates used in the computations. The list contains ten (decreasing) years of inflation rates, beginning with the proposed delivery year. The rates are taken directly from the selected inflation rate table, provided they match the years in the list.

You can change individual inflation rates, or supply missing rates, during a "recalc" session. See Section 6, Recalculation Sessions, for further information. Also, see Appendix A for information on how to modify or add your own inflation rate tables.

5.5 LOWER-RIGHT SECTION - COMPUTED RESULTS

This section shows the results of any computations performed on the buy history, and any determination of risk level which was made. Only the historical buys which are NOT preceded by an asterisk (*), a hyphen (-), or a pound sign (#) are used in computations. These symbols are used by the analyst to "toggle off" the record and exclude it from the summary statistics. Buys preceded by one of these symbols are bypassed during calculations.

The Total Quantity is the sum of the quantity values of all buys for the NSN selected.

The Average Price is the average unit inflation price of all buys for the NSN selected.

The Weighted Avg Price is the average inflation price weighted by the quantities of all buys for the NSN selected.

The Median Price is the median unit inflation price of all buys for the NSN selected.

The Standard Deviation is based on the unit inflation price of all buys for the NSN selected.

The Risk Level is determined as follows:

- | | |
|--------------------|---|
| LOW RISK | - if the proposed purchase price is within one standard deviation of the Average Price. |
| MEDIUM RISK | - if the proposed purchase price is between one and two standard deviations of the Average Price. |
| HIGH RISK | - if the proposed purchase price is greater than two standard deviations from the Average Price. |
| EXCEEDS 25% | - if the proposed purchase price exceeds the lowest price paid within the last year by 25% (this overrides any preceding levels). |
| N/A | - not applicable (either a proposed price was not supplied or less than two items were selected for computation). |

The bar underneath Risk Level is shaded to depict how far the proposed price deviates from the Average Price. Each section of the bar, moving from left to right, represents one standard deviation from the Average Price.

5.6

INTERPRETING RISK LEVEL

The risk level of a proposed price is only a rule of thumb. It is based on how the proposed price compares to historical unit prices. CLIPA always reports a risk level if this information is available; however, other factors can influence risk level, on which information is not available. Some examples serve to illustrate this.

A decrease in prices could invalidate the risk level determined by CLIPA. For instance, the prices of some models of microcomputers have been cut in half over the past five years. CLIPA does not have any information on current market prices. Accordingly, if a proposed price is equal to the historical price (of five years ago), CLIPA would report this as a **LOW RISK**. It is actually twice as high as the current market price and is obviously a **HIGH RISK**, but without the current market prices, CLIPA is unable to make this distinction.

As another example, the prices of some products, such as gasoline, fluctuate considerably over time. If the current market value is at a low point, CLIPA might determine that a proposed price is a **LOW RISK**, whereas, it is actually a **HIGH RISK**.

When you are interpreting risk level, you should take the following into account:

- Information on current market prices should be considered whenever possible.
- The more the historical prices (adjusted for inflation) fluctuate, the less reliable is the risk level determined by CLIPA.

5.7

PRINTED OUTPUT

To get a formatted printout of the output display screen, press **F7** from the output display screen. You can only print before or after a "recalc" session, not during. To print the results of a "recalc" session, press **HOME** to recalculate and end the session, then press **F7** to print.

If a partial record is displayed on the screen, a partial record is printed; otherwise, a full record is printed. Use the **F9** key to select a partial or full record before pressing **F7** to print.

The information on the printed report is the same as the information on the output display screen, although arranged differently. Refer to the preceding sections for a complete description of each of the items. Also, refer to Appendix C for a description of the column headers.

SECTION 6

RECALCULATION SESSIONS

During a recalculation session, referred to here for simplicity as a "recalc", you can:

- drop selected line items,
- reuse previously dropped line items, and
- change individual inflation rates.

You may wish to drop selected line items if their historical values, such as unit price, are obviously inaccurate, due to errors in the database. You may wish to change individual inflation rates if you have more accurate values available for particular NSNs. Any changes made during a "recalc" are temporary. They do not permanently modify the CLIPA database or the inflation rate tables.

After a retrieval is processed, "recalcs" are done from the output display screen. You can only use information from the most recent retrieval.

To begin a "recalc" session, press the TAB key. This highlights the border around the buy history area. Pressing the TAB key again highlights the border around the inflation rates area. Successively pressing the TAB key alternately highlights the buy history area and inflation rates area.

To drop a line item from computations, press the TAB key until the border around the buy history area is highlighted. The up and down arrow keys are then used to position the cursor in front of the line item. Lastly, press the spacebar to completely drop the line items from computations. The resulting pound sign (#) indicates the line item will not be used when the values are recomputed. You can drop as many line items as you wish. To remove any pound signs, position the cursor over the pound sign and press the spacebar. The pound sign is removed, and the line item will then be used when the values are recomputed. You cannot recall line items preceded by an asterisk (*). Their history is never used for it is either too old or incomplete.

To change any of the inflation rates, press the TAB key until the border around the inflation rates area is highlighted. The up and down arrow keys are then used to position the cursor at the desired rate. Type in the new value and press ENTER. The exclamation point (!) which appears in front of the rate indicates the value has changed. You can change as many inflation rates as you wish. The values are stored to one decimal point. Negative and zero inflation rates are allowed. To restore a changed rate to its original value, position the cursor over the rate, type in a single minus sign (-), and press ENTER. The exclamation point will disappear. This indicates that the rate shown is the original rate.

You can alternate between the buy history area and the inflation rates area as many times as you wish by pressing the TAB key. After you have made your desired changes, press the HOME key to recompute and display the new results.

If you exit to the Selection Criteria screen and then return to the display screen (by pressing F3 - Redisplay) after recalculating, the status of the display screen remains unchanged. In other words, all modifications are retained. However, if you exit to the Selection Criteria screen and initiate another retrieval (by pressing HOME - Process), all information from the previous retrieval is lost.

Help is available by pressing F1.

SECTION 7 BATCH INPUT

7.1 INTRODUCTION

The Batch Input option is the second option on the Main Menu. It allows you to supply selection criteria for several retrieval requests, save them in a file, and process the file at a later time. When the file is processed, a complete report is generated for each request. It is the same as the report generated for a request made interactively.

A file of retrieval requests is referred to as a batch file. You must supply a unique name for each batch file. You may maintain as many batch files as you wish, and each batch file may contain as many retrieval requests as you wish. One retrieval request is a record in the file.

All batch files are automatically given a file extension of CBF (CLIPA Batch File). They are stored in the directory specified on the third line of the File Specifications screen. This screen is normally set up during installation. Ensure the pathname is valid before using this option. Refer to Section 10, File Specifications, for information on specifying CLIPA pathnames. Refer to the Section 9, Batch File Maintenance, for information on how to list, delete, rename, copy, and pack batch files.

The fields on the Selection Criteria screen for Batch Input are the same as the fields on the Selection Criteria screen for Price Inquiry and Analysis. Section 4 contains a description of the fields and how they are used.

7.2 SPECIAL KEYS ON THE Selection Criteria SCREEN

The following function keys are active when specifying selection criteria:

- ESC** - Exits and returns you to the main menu.
- F1** - Invokes help (although not explicitly stated, F1 is available on all screens).
- F3** - Appends a new (blank) record to the end of the file.
- F4** - Marks a record for deletion, or recalls (undeletes) a record previously marked for deletion.
- F5** - Toggles data entry verification on and off. When on, all fields are validated before the record is saved. When off, verification is not performed.
- F7** - Prints a formatted listing of all the records in the batch file.
- F9** - Displays a selection box to either get an old batch file or create a new file.
- END** - Displays the remaining items of the menu line at the bottom, since they cannot all fit on a single line.

Use the ENTER, TAB, and Up/Down arrow keys to step through the prompts.

Use the BACKSPACE and DEL (delete) keys to erase characters in a field.
Use the INS (insert) key to insert characters in a field.
Use the Left/Right arrow keys to move within a field.
Use the PgUp and PgDn keys to move to the previous record and next record, respectively.
Use Ctrl-PgUp and Ctrl-PgDn to move to the first record and last record, respectively.

7.3 SPECIFYING A BATCH FILE

When you enter the Batch Input option, a selection box appears requesting you to supply the name of a batch file. If a file with the name you supply exists, then the file is retrieved, and the first record is displayed on the *Selection Criteria* screen. If a file with the name you supply does not exist, you are asked if you wish to create a new file. You can do so by pressing ENTER. When the new file is created, the fields on the *Selection Criteria* screen are cleared (except for the *Inflation table* field). The file is positioned at the first record and is ready for input.

The filename must conform to standard DOS file naming conventions (eight characters or less, no embedded spaces, etc.). Do not use a file extension or directory pathname. CLIPA automatically supplies them. Uppercase and lowercase letters are equivalent; the case does not matter.

If you are retrieving an old batch file, you may select the file from a list instead of explicitly supplying the name in the selection box. To do so, leave the selection box blank and press ENTER. When the list of filenames appears, position the cursor in front of the desired filename and type an S to select the file. You should then press HOME to retrieve it. You are then returned to the *selection Criteria* screen with the first record displayed and it is ready for input.

The lower left-hand corner of the *Selection Criteria* screen displays the name of the currently selected file after the word "File:". If no name is present, then a file is not selected. Accordingly, no records will be saved. The "Rec:" field following the filename shows which record is currently displayed on the screen. The number of records in the file follows the record number that is currently displayed. For example, "2 / 7" means the file is positioned at record 2 and the file contains 7 records.

You may create a new batch file or get an old file at any time by pressing F9. When the selection box appears, follow the preceding directions.

7.4 BATCH INPUT OPERATIONS

The rules governing data entry for Batch Input are identical to the data entry rules for *Price Inquiry and Analysis*. Sections 4.4 and 4.5 describe how to add, delete, verify and save batch file records.

When a batch file is created, or an old batch file is retrieved, the file is always positioned at the first record. In the case of a new file, all fields are cleared, except the *Inflation table* field, which is set to the default table. Recall that the "File:" field near the bottom of the screen indicates the name of the current file, and the "Rec:" field indicates the current record number and the number of records in the file.

To add a new record to the file, press F3. The new record is always appended to the end of the file, and the file is automatically positioned there. The "Rec:" field indicates the new record number. All fields are cleared except the *Inflation table* field, which retains its current setting.

PgUp moves to and displays the previous record in the file. PgDn moves to and displays the next record in the file. Ctrl-PgUp moves to the top of the file. Ctrl-PgDn moves to the bottom of the file.

To mark a record for deletion, press F4. The symbol "(Del)", which appears near the bottom of the screen, indicates the current record is marked for deletion. When a record is marked for deletion, it remains in the file. It may be recalled (or undeleted) at any time by again pressing F4. The F4 key acts as a toggle switch to delete and recall records. Although a record marked for deletion remains in the file, it is bypassed when the batch file is processed. Only the records that are not marked for deletion are used in processing. To actually remove a record marked for deletion from a batch file, the file must be packed. Refer to Section 9, Batch File Maintenance, for information on packing files. It does not hurt to leave records marked for deletion in a batch file.

F5 toggles data entry verification on and off. When verification is on, the values of each field are checked before the record is saved. If any errors are found, appropriate error messages are displayed. The record is not saved until all errors have been corrected. When verification is off, error checking is not performed when the record is saved. Whenever a new file is created or retrieved, verification is turned on by default. The verification setting remains in effect until it is changed. The current setting is displayed near the bottom of the screen. Records which are marked for deletion are never verified, even if verification is on.

Although an explicit command to save a record does not exist, the current record is automatically saved whenever one of the following occurs:

- the PgUp, PgDn, Ctrl-PgUp, or Ctrl-PgDn keys are pressed.
- the F3 key is pressed to append a new record.
- the F9 key is pressed to create a batch file, or retrieve an old file.
- the ESC key is pressed to return to the *Main Menu*.

If verification is on, the record is verified before it is saved in the first two cases only. The record is not verified prior to being saved in the last two cases, even if verification is on.

To print a formatted listing of all the records in the current batch file, press F7.

SECTION 8

BATCH FILE PROCESSING

The **Batch File Processing** option is the third option on the *Main Menu*. It allows you to generate printed buy history reports from the data saved in a batch file. Refer to the chapter on **BATCH INPUT** for information on creating and using batch files.

To select a batch file for processing from the *Batch File Selection* screen, place an **S** in front of the filename. Up to 20 files may be selected. If you select more than 20, only the first 20 are processed. After your choices have been made, press **HOME** to retrieve the files and return to the *Batch File Processing* screen. By pressing **HOME** again, processing will begin. All selected files are processed consecutively without interruption. When processing is finished, you may select more files by pressing **F5** to return to the *Batch File Selection* screen.

Use the **F9** key to select either a **partial** (one line per item) or **full** (two lines per item) record print.

In the *Batch File Selection* screen, use the up and down arrow keys to move through the filenames. Use the **PgUp** and **PgDn** keys if the filenames exceed screen capacity.

The output listing is the same as to the output generated from the print option of the **Price Inquiry and Analysis** function. Section 5 contains information on how to interpret the output.

If the batch files do not appear on the *Batch File Selection* screen, check the pathname on the *File Specifications* screen to ensure they are set to the proper directory. Refer to Section 10, *File Specifications*, for further information.

SECTION 9

BATCH FILE MAINTENANCE

The **Batch File Maintenance** option is the fourth option on the *Main Menu*. It allows you to list, copy, rename, delete, and pack batch files. These operations, except packing a file, can also be done using the standard DOS commands. Packing a file removes the records marked for deletion.

To **copy** a file, place a **C** in front of the filename. Next, type the target filename in the **NEWNAME** column. The name must conform to standard DOS file naming conventions (eight characters or less, no embedded spaces, etc.). Do not use a directory path or file extension.

To **rename** a file, place an **R** in front of the filename. Next, type the new filename in the **NEWNAME** column. The name must conform to standard DOS file naming conventions (eight characters or less, no embedded spaces, etc.). Do not use a directory path or file extension.

To **delete** a file, place a **D** in front of the filename.

To **pack** a file, place a **P** in front of the filename.

You may indicate as many operations as you wish. Press **HOME** to initiate the operations.

If you choose to perform multiple operations, they are performed in the following order: all deletes are done first, all renames second, all copies third, and all packs last.

Use the up and down arrow keys to move through the filenames. Use **PgUp** and **PgDn** if the filenames exceed screen capacity.

When the actions are complete, appropriate messages are displayed in the **NEWNAME** column. If you wish to make more selections, you must first press **F5** to refresh the screen.

If a list of batch files does not appear on the *Batch File Selection* screen, check the pathname on the *File Specifications* screen to ensure it is set to the proper directory. Refer to Section 10, *File Specifications*, for further information.

SECTION 10

FILE SPECIFICATIONS

The **File Specifications** option is the fifth option on the **Main Menu**. It is used to set directory paths for the CLIPA database files and batch files. This option does not create the directories. The directories are created using the standard DOS commands, normally at installation.

The **File Specifications** screen contains entries for directory paths to the history file, the part number file, and the batch files, respectively. Type in the appropriate path specifications, including the logical drive. Do not include filenames. Then press **HOME** to save the settings. Nothing is saved until **HOME** is pressed.

The following is a typical setup:

```
History file      :    D:\CLIPA
Part number file  :    D:\CLIPA
Batch files       :    C:\CLIPA\BATCH
```

You can test the specifications by pressing **F2**. The results of the test are displayed near the bottom of the screen. If an error is reported for the history file or the part number file, then either (1) the file was not installed, or (2) the directory path is invalid, or (3) the file is accessible, but CLIPA cannot use it. If an error is reported for the batch file path, then the directory or subdirectory names do not exist on the specified drive.

If you press **F2** to test the file specifications, the new entries are not saved. You must press **HOME** to save any changes.

CLIPA files may be installed in any directory on any drive. However, the batch files should be installed in the same directory as the program files (or one of its subdirectories). The database files (that is, the history file and the part number file) should reside on a different physical hard disk. Two different disk heads can then work independently to access the files while CLIPA is running. Since the database files are extremely large by microcomputer standards, this not only speeds up access time, but also saves wear and tear on the disk.

ATTACHMENT A
MAINTAINING INFLATION RATE TABLES

**APPENDIX A
MAINTAINING INFLATION RATE TABLES**

This appendix explains how to modify or add your own inflation rate tables for use in CLIPA.

CLIPA provides the following inflation rate tables:

PRODUCER PRICE INDEX (INDUSTRIAL COMMODITIES)
WAGES AND SALARIES OF ALL PRIVATE INDUSTRY WORKERS
IMPLICIT PRICE DEFLATOR - GROSS NATIONAL PRODUCT
CONSUMER PRICE INDEX (ALL URBAN)
CONSUMER PRICE INDEX (WAGE EARNERS)
ELECTRONIC COMPONENTS AND ACCESSORIES

All inflation rate tables are stored in file **INFRATES.TBL**, which resides in the CLIPA root directory. **INFRATES.TBL** is a standard ASCII text file that may be edited with any text editor or word processor. If you make changes to the file, be sure to save it in ASCII format.

The following is a partial inflation rate table from file **INFRATES.TBL** to serve as an example:

```
TITLE WAGES AND SALARIES OF ALL PRIVATE INDUSTRY WORKERS
LABEL Wages/Salaries - Private Industry Wkrs
1992 004.9
1993 005.0
1994 005.2
1995 005.3
1996 005.3
```

Each inflation rate table begins with the word **TITLE** in column 1, followed by a space, and a descriptive title. The title is what appears in the *Inflation table* field on the Selection Criteria screen. It is used to identify and select an appropriate table.

Immediately below the title, the word **LABEL** begins in column 1, followed by a space, followed by a descriptive label. The label is what appears on output screen displays and printed reports. The purpose of the label is to provide a short description of the table, so it can fit in smaller spaces on output displays. Anything over 38 characters is truncated.

Immediately below the label is a list of years (in columns 1 through 4) and their corresponding inflation rates (in columns 7 through 11). The rates are expressed as percentages (without the percent sign) to one decimal place. A rate of 5.3, for example, means 5.3%. Negative and zero inflation rates are allowed. The list may contain as many pairs of values as you wish but only one pair per line.

The **TITLE** is required. The **TITLE** indicates the start of a new table, and also identifies the table. The **LABEL** is optional, but recommended. If the **LABEL** is omitted, the first 38 characters of the **TITLE** are used on output.

An inflation rate table ends where the next table begins (that is, with the next **TITLE** line), or at the end of the file. You may store as many tables in **INFRATES.TBL** as you wish; however, **CLIPA** will only use the first 20 tables. If you store more than 20 tables, you must edit **INFRATES.TBL** and move the tables you want to use. They must be moved up to the top 20 before starting.

The first table in **INFRATES.TBL** is considered the default table. This is the table which is used if no other table is selected in a **CLIPA** session.

ATTACHMENT B
ERROR MESSAGES

ATTACHMENT B
ERROR MESSAGES

Many of the messages issued by CLIPA are self-explanatory. Others require further explanation or specific action. Only those requiring further explanation or specific action are listed in this section.

Each message is preceded by an identifying number and followed by a description of the problem. When appropriate, the recommended action to take is included.

1. Complete NSN is required

Desc: To request retrieval by NSN, all 13 characters of the NSN are required. Do not use special characters or embedded spaces.

4. Part number is required if NSN is unknown

Desc: Either the NSN or the part number is required for retrieval. Since the NSN is blank, CLIPA assumes you are requesting retrieval by part number, and the part number must be supplied.

5. Quantity must be all numeric

Desc: Only the digits 0 through 9 are allowed. Do not use commas, decimal points, or any other special characters.

6. Price must be all numeric

Desc: Only the digits 0 through 9 and a decimal point are allowed. Do not use commas, dollar signs, or any other special characters.

7. Delivery date must be of the format MMYT

Desc: The delivery date must be four numeric digits. The first two digits (which denote the month) must be between 01 and 12. The last two digits denote the year. Do not use special characters or spaces.

8. Delivery date cannot precede current date

Desc: The delivery date was interpreted as being prior to the current month and year. Be sure that the date is four number digits in MMYT format. See Section 4.5.

9. Invalid delivery date month

Desc: The first two digits of the delivery date must be between 01 and 12.

20. The history file was not found

Desc: Either the history file was not installed, its path specification is incorrect, or a non-CLIPA program modified its contents. The name of the history file is CLIPAPHF.DAT. Be sure that the path to the file is valid. Refer to Section 10, File Specifications, for information on how to specify the directory paths. If the path to the file is correct and this message still occurs, then the history file must be installed.

21. The part number file was not found

Desc: Either the part number file was not installed, its path specification is incorrect, or a non-CLIPA program modified its contents. The name of the part number file is CLIPAXRF.DAT. Be sure that the path to the file is valid. Refer to Section 10, File Specifications, for information on how to specify the directory paths. If the path to the file is correct and this message still occurs, then the part number file must be installed.

22. The key is past end-of-file

Desc: The highest value you may use to specify an NSN is 13 Zs (ZZZZZZZZZZZZZZ). The highest value you may use to specify a part number is 15 Zs (ZZZZZZZZZZZZZZZZ). Do not use special characters or embedded spaces.

24. To browse, the cursor must be on NSN or part number

Desc: The F2 key was pressed to request browse, but the cursor was not on the NSN field or the Part number field. To browse by NSN, position the cursor over the NSN field and press F2. To browse by part number, position the cursor over the Part number field and press F2.

25. Only highlighted fields can be selected or cross-referenced

Desc: No field is highlighted. This occurs if the file is positioned at the very top or very bottom. If you are at the top of the file, press the down arrow key to highlight a field. If you are at the bottom of the file, press the up arrow key to highlight a field. When browsing, the highlighted area remains fixed, and you must move the appropriate record up to it.

30. Not a valid CLIPA file

Desc: The file you tried to access exists, but CLIPA cannot use it. All CLIPA files are coded in some way, and this file did not have any recognizable coding. Chances are a non-CLIPA program created it or it is altered in some way.

31. No file has been selected or the file is corrupt

Desc: You have attempted to save a record, but a file has not been selected. Accordingly, the record cannot be saved. Press F9 and select a new file. The name must conform to standard DOS naming conventions (eight characters or less, no embedded spaces, etc.). If the message occurs again, check the directory path on the *File Specifications* screen (the fifth option on the *Main Menu*) to ensure it is set to the correct directory containing the batch files. If the directory path is incorrect, CLIPA cannot resolve the filespec.

32. Invalid filename

Desc: The filename must be eight characters or less, and cannot contain any embedded spaces. Do not use a directory path or file extension. For best results, form the filename using only the digits 0 through 9 and the characters A through Z.

34. No selection has been made

Desc: You can only use F3 to redisplay the output screen after a retrieval has been made. Also, if you selected a key field from browse and returned to the *Selection Criteria* screen, the previous retrieval information is cleared. It is not possible to redisplay the output screen until another retrieval is made.

35. No records are available for recalculation

Desc: Only records which are not preceded by an asterisk (*) or a pound sign (#) are used in computations, and all of the records are preceded by one of these symbols. Refer to Section 6, *Recalculation Sessions*, for further information.

36. Maximum number of files exceeded

Desc: A maximum of 50 files can be displayed. Delete any unnecessary files, or, if possible, perform the desired operations using the standard DOS commands.

37. No selections have been made

Desc: The HOME key was pressed, but no files have been selected for processing. To select a file, place an S in front of the filename(s) and press HOME. If you do not wish to select any files, then press ESC to exit.

41. Must print after making selection

Desc: You can only print the results of a retrieval after the request was processed (by pressing HOME). Either a retrieval has not yet been made, or the results of the previous retrieval have been cleared. This can happen if you select a key field from browse and return to the Selection Criteria screen. Press HOME to process a retrieval request, then press F7 to print the results.

42. Must print after recalculation (press HOME to recalculate first)

Desc: You cannot print during a recalculation session (that is, when the border of either the buy history area or the inflation rates area is highlighted). Press HOME to recalculate, then press F7 to print.

99. Undetermined system error

Desc: This is a program failure. Contact DORO-C.

ATTACHMENT C

DESCRIPTION OF CLIPA DATABASE FIELDS

ATTACHMENT C
DESCRIPTION OF CLIPA DATABASE FIELDS

CLIPA uses the following data elements. The column headers appear on output displays and printed reports.

<u>Column header</u>	<u>Description</u>
NSN	National Stock Number
PART-NO	Manufacturer's part number
FSCM	Federal Supply Code for Manufacturers
DESCRIPTION	Nomenclature associated with a part number
UNIT-PRICE	Definitized or firm unit price
QUANTITY	Total quantity on order for a specific CLIN
DEL-DATE	Delivery date - first scheduled delivery date from the contract.
ISS-BY	Issued by - identity code of the office issuing the document.
T	Type of contract
REV-DATE	Value review report date - date of value review price
REVIEW-PRICE	Value review price - government recommended price as a result of level 2 price analysis (not necessarily the same as price paid).
PIIN-SPIIN	Contract number (Procurement Instrument Identification Number - Call/order).
CLIN	Contract/Exhibit Line Item Number
UI	Unit of issue or purchase unit (i.e., EA, HD)
CONTR	Identity code of the contractor
B	Breakout candidate - Y if candidate for competition; N if not.
FOB	(reserved for future use)
EFF-DATE	Line effective date - effective date of the definitizing modification.

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