



SPECIAL REPORT

PERS 122

G. V. KASS

SUPPLEMENT TO THE ACCOUNTING PROGRAM
OF THE N.I.P.R. (1969 VERSION)

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Thanks

PB

I wish to express my gratitude and give special thanks to Mr. R.S. Hall the head of our Computer Division for the confidence he has had in me and for his encouragement in the production of the Accounting System and its manuals.

I wish to thank Miss C.M. Elder, head of the Processing Section of our Division for her patience and fortitude in running the programs, and her co-operation in getting them 'going'.

Thanks are also due to Mr. M. Malele and Mr. A. Molatedi for the excellent way in which they typed data into the input program, especially during testing when it did not always behave too well.

Thanks must be given to the Punching Section as a whole for the thousands of cards that passed through their hands for me.

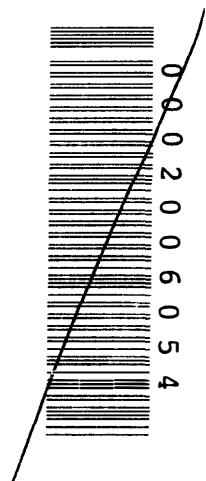


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PART I

This is a full description of the input via the terminal to the IMPUT program.

Documents

All input is in the form of a document.

There are three main types of document.

- (i) Day-to-day documents. These are the documents specifying various forms of commitments, expenditure and income. Also included are documents specifying the initial budgeted amounts set aside at the beginning of the year.
- (ii) Update documents. These are the documents that update the tables used by the input program for checking entries and for assigning internal codes.
- (iii) Program Information and Command Documents. These are used by the program and are not entered into the monthly file for further processing.

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Supplement to An Accounting Program for the N.I.P.R.
(Version 1969)

by G.V. KASS.

Contents

This supplement revises Special Reports Nos. 98 and 107; and adds information concerning new documents and facilities included in the 1969 Version of this program.

Part I

A full description of the format of the documents accepted by the Input Program is given.

A full description of the various options and editing by the Program is given.

A revised list of messages given by the input program (including new ones) is given here.

Sample Runs of the program are given.

Reference is made to the Glossary prepared for the Input Program.

Parts II and III

A list of amendments pertinent to Special Reports Nos. 98 and 107, are given.

Fields

Each document has various fields. The fields for any one document are defined by the order in which they appear, e.g. the first field in any document is the document number.

Field Delimiters

- (i) A comma (,) delimits individual entries,
e.g. 1, 2, three. The first field contains a 1
" 2nd " " a 2
" 3rd " " 'three'

If a field is specified by 'Default' (see later) it must still positionally be present,

e.g. 1,, three. The 2nd field is specified by default.

- (ii) A slash (/) can be used to delimit (separate) numeric entries, i.e. in a string of numeric entries, '/' is interchangeable with ','. It is usually used for visual effect in delimiting date entries (e.g. 1/1/70) or division-project entries (e.g. 7001/4002).
- (iii) An equals sign (=) precedes a checksum (see discussion under checksum).
- (iv) Carriage Return (CR) is used to delimit a line and return control to the input program.
- (v) A dollar sign (\$) is used to delimit a document. This symbol is not recognised if a checksum for the item entries in a document has still to be given.
- (vi) An asterisk (*) is used to delimit the end of the program run. After this symbol has been accepted, the program closes down. This symbol is not recognised if the last document has not yet been completed.
- (vii) Special Delimiters. See under "Special Entries."

Special EntriesEditing Entries

- (i) A question mark (?) immediately before a carriage return (CR) indicates that the line just typed should be ignored.
- (ii) A backspace (←) indicates that the last character typed should be ignored. It can be used cumulatively, i.e. two successive backspaces indicate that the last two characters should be ignored, etc.
Backspaces going past the first entry on the line are ignored (e.g. 'AB ←← C' results in the character C; the third backspace was ignored).
- (iii) A hash sign (~~#~~) as a single line entry requests the removal of the last entry in the internal program buffer. It can be used cumulatively i.e. a hash sign repeated on a second line requests that a further entry should be removed from the internal program buffer.
If a hash sign is used when there are no entries in the internal buffer, it is ignored.
Note: a. Entries that have been accepted and written away to disk cannot be deleted with the hash sign.
b. The checksum is left unaltered.
- The main uses of this entry are
- a. To delete an individual item just entered in a 20 or 30 document, especially after a warning message that the entry to be created already exists.
 - b. To 'scratch' the internal program buffer by repeated use of ~~#~~.
- (iv) A double quote (") as a single line entry requests that the checksum for the immediately preceding line be removed. Cannot be used cumulatively. (Consecutive usage has no effect).
It does not cause any entries in the internal program buffer to be deleted.

The use envisaged is after the error warning message
 \$BAD PROJECT/..... ONLY USED FOR CHECKSUM.\$
 and the project was genuinely in error.

Restriction: Not to be used when entering documents with staff times
 (Documents 1, 21, 22,)

Reserved Entries

- (i) '\$' means force end of document, even though a checksum has not been given.

Entries in the internal program buffer not yet transferred to the Output well, are lost.

This is to be used when a document cannot otherwise be completed, by using '\$'.

- (ii) '>' as a single line entry: force termination of the program, no matter what you are in the middle of doing.

All files are closed in the normal way.

To be used as a last resort if the program starts producing nonsense although in that case it may be safer to ask the computer operator to cancel the job.

It could also be used as an emergency shut-down, if there is no time to complete what is presently being done.

Numeric Fields

A numeric field contains:-

- (i) The digits 0, 1, 2, ..., 9. Blanket restriction: No number may contain more than thirteen (13) digits.

Any one numeric field is usually further restricted.

For example a Vote may not contain more than three (3) digits.

- (ii) A decimal point (.). Blanket restriction: Maximum of one decimal point per number, and no more than two digits may appear after the decimal point in the number.

Any one numeric field may disallow a fractional number.

For example a Vote may not be fractional.

- (iii) A unary sign (+,-) Blanket restriction: Maximum of one sign per number.

The sign may appear either before or after the number.

Any one numeric field may disallow the minus sign.

For example a Vote may not be negative.

- (iv) A blank (b). Always ignored in a numeric field, whether it be a leading, trailing or embedded blank.

General formation of numeric fields:

- (i) A numeric field is either blank (when specified by "Default" see below) or consists of the digits 0 - 9 and optionally a sign (+ or -) and/or a decimal point.
- (ii) Leading zeroes may be omitted.
- (iii) Trailing zeroes after the decimal point may be omitted.
- (iv) No more than two (2) figures may appear after the decimal point.
- (v) No number may have more than eleven (11) figures before the decimal point.
- (vi) If no digits are present, the number is assumed to be zero (0). (See Defaults).
- (vii) If no sign is given, the number is assumed to be positive (+).
- (viii) If no decimal point is given, the number is assumed to be an integer, (i.e. as if the decimal point had been given at the very right hand side of the number).

Alphanumeric Fields

In general all characters except the comma (,) which delimits a field, are acceptable.

Care should be exercised when using characters that are also 'Special Entries', in cases where ambiguity may arise. For example, a password ending in '?' would have to be entered as ending in '?b' so that the input program should not interpret the trailing '?' as a request to cancel the line.

(See "Special Entries").

Editing of alphanumeric fields:-

- (i) Leading and trailing blanks are ignored.
- (ii) Blanks preceding and following a slash (/) are ignored.
- (iii) Embedded blanks are reduced to blank where two or more blanks occur together,

e.g. 'bbTHISbbbISbAWORDb.b' is equivalent to
'THISbISbAWORDb.'

Note that blanks are not added to or removed from where they should be to make sense, and also that if an original string had an embedded blank, it must be retained when re-entering this string.

- (iv) Lower case alphabet is converted to upper case.

Passwords

The input program can be considered as having two levels of security. The first or lowest level is that of using the program to add entries to the monthly file, usually of the form of itemising expenditure under a specific project.

The second level of security is that needed for updating the basic files used for checking and editing the other input data. Under this higher level of security, entries allowable under the lower level are also accepted.

A password is an alphanumeric string up to 30 characters long. All characters may be used in the password except - the comma (,).

A password must be entered when requested by the program. See under Document 50 for a further discussion on entering a password.

The passwords are originally initialised to PASSWORD1 and PASSWORD2 for the first and second level passwords respectively. The passwords can be changed. There is no limit to the number of times that they can be changed. See under Document 51 for a further discussion of how to change the passwords.

If the passwords are forgotten, there exists a method for retrieving them.

Checksums

To ensure correct (or complete) entry most documents that contain numeric entries are verified with checksums. Exceptions are some update documents which are assumed to be correct if they satisfy other criteria.

There are two sorts of checksums, an item's checksum and a document checksum.

The document checksum is the sum of all the items checksums for the document. The only action taken by the program when receiving a document checksum is to report whether it was correct or not. See under error message '\$ DOCUMENT CHECKSUM IS....'

An item's checksum is the sum of all items since the last given checksum, or since the beginning of the document in the case of the first checksum.

The summing of entries given by default can be divided into two classes. Firstly, default entries for the document number and the document identifying information which are not usually added into the checksum. Secondly, default entries for the individual item entries which are usually added into the checksum. For precise details, look at the specific document description.

After an item's checksum has been given and found correct, the entries up to this point are written away and may no longer be modified. If the item's checksum is incorrect either the editing mode is entered (see under 'Editing Mode'), or all entries not yet validated by a checksum are rejected.

Notes on Checksums

- (i) The first checksum on a document must include the document number, and any identifying information (unless specified by default).
- (ii) No document may end before an item's checksum has been given (except for those documents which do not have checksums).
- (iii) A zero checksum is not recognised by the program.
- (iv) The numbers are added into the checksum as they are entered.

An exception to this is the date which appears as dd/mm/yy (3 numbers), but is added to the checksum as ddmmyy (1 number).

Note further that each of the 3 original numbers contribute 2 digits to the number to be summed - thus 1/1/69 is added as 10169, and not as 1169.

Appearance of checksums

A checksum immediately follows an equals sign (=). It must be the last entry on a line, except for a document checksum which is followed by a dollar sign (\$), the end of document marker.

An item's checksum can thus appear either

- (i) At the end of the document identifier line.
- or (ii) At the end of an individual item entries line.
- or (iii) On a line by itself.

Checking

After each line has been entered, and preliminary editing has been performed (backspace elimination, lower to upper case conversion, compacting alphabetic entries) various checks are performed. (Not necessarily performed in the order given).

- (i) Number of entries on the line.
- (ii) Length of alphanumeric information.
- (iii) Validity of numeric items.
- (iv) Range of numeric items.
- (v) Table look-up of specific fields.

If any of these checks fail, the error is reported, the line rejected, and the user may re-enter the line correctly.

An exception is a project number not in the table. In such a case it is assumed that the project was entered correctly, though it had not yet been included in the project table. The project number and associated entries (e.g. amounts) are accepted for the purpose of calculating the checksum, but they are not transferred to the buffer. This is reflected in the message:

~~SBAD PROJECT / ONLY USED FOR CHECKSUM.~~

If the project was typed incorrectly, then the action of accepting it for checksum purposes, is unnecessary.

To correct this, enter a double quote (") to clear the checksum; see "Editing entries, (iv)".

Note: This should not be used for 'Times' Documents.

(i.e. Document 1, 21, 22,)

Defaults

A number is specified by default by leaving the appropriate field blank, or putting it equal to zero. (Use zero only for numeric items. Zero is not a valid original entry for items which can be specified by default. See Detailed Document Description). Not all fields can be specified by default. When a field is specified by default it must still be positionally present. Thus a line will contain the same number of commas (and slashes) whether or not items are entered by default.

A default entry means: that the same entry is used for this item as was used last time,

e.g. Default document number means - I want the same document number as last time,

or as a default Rank means - I want the same rank as last time.

See Detailed description of documents to see which entries may be entered by default.

Checksumming Default entries

See detailed description of documents to see which defaults are added into the calculated checksum.

In general, document identifying information is not usually added to the checksum (Document 26 being an exception), but default entries in the individual item entries are.

Some entries may be entered by default only in certain documents. Entries that can be entered by default in all documents are:-

- (i) Document number.
- (ii) Division of a division project.
- (iii) Project number in a division-project.
- (iv) Vote number.
- (v) Supplier's number.
- (vi) Invoice number.

The Editing Feature

When a bad checksum is entered during individual item entries (in contrast with document identifying information) the editing feature is called in. Documents which can contain more than 1 individual item entry per typed line (e.g. Documents 1, 21) cannot make use of the editing feature, and items are rejected after an incorrect checksum.

Once the editing feature is called in, the incorrect checksum is ignored. After editing (if any) has taken place further item entries may be entered, followed by another checksum (or the same as the old one). If the new checksum is now correct the item entries are accepted. If the new checksum is incorrect the editing feature returns to permit further changes. An "incorrect item - editing feature - incorrect item" cycle can be broken by using '%\$' to force the end of document. See under 'Reserved Entries'.

Editing takes place in two phases.

The first phase requires entry of the line number for the line to be corrected (if any).

The second phase accepts the re-entered line.

Lines are changed one at a time in any order. Lines may not be deleted in the editing phase.

Description of Phase I

Phase I is introduced by:-

~~/\$CHANGE WHICH LINES?/\$~~

L

After the prompt 'L' a number n (0-100) should be entered.

If n = 0 or blank:

Used when the checksum has been entered incorrectly, or a line has been left out, or all editing changes have been made.

The editing feature is terminated and return taken to the point just before the incorrect checksum was given.

(If the incorrect checksum occurred at the end of an item line the line was accepted, and need not be retyped).

If desired, a checksum can be entered immediately upon return.
Otherwise further individual item entries may be presented.

If $n \neq 0$ nor blank

Proceed to phase II to re-enter line number n

Note: (i) $n = 1$ means change the first individual item entry line, etc.

(ii) The editing feature does not allow for the modification of the document identifying information.

(iii) If n is not in range (e.g. try to change the 3rd line when only 2 have been entered), an error message is given and a new n must be entered.

Description of Phase II

Phase II is introduced by:-

E

After the prompt 'E' (or 'R' for Repeat, if necessary), re-enter the correct form of line number \underline{n} (n from Phase I).

Notes: (i) checksums should not be entered during Phase II.

If you wish to enter a checksum, exit from the edit ($n = 0$ in Phase I), and then give the checksum.

(ii) The end of document marker '\$' will not be accepted here.

(iii) Special symbols ''' and '=' should not be entered here.

(iv) An invalid individual item entry line will produce the usual error message (i.e. the same as would have been produced without the editing facility) followed by a request for a valid individual item entry line.

(v) A valid individual item entry line must be given even if it is the same as the one originally entered.

Warning

Although an item entry line may have been entered using the default options (q.v.), it is recommended that unless great care is taken, default option are not used in lines entered during editing, as the 'default value' may have changed since it was originally used.

For example, a default vote given in an edit line means:

Take the value of the most recent vote entered into the program (whether valid or not).

It does NOT mean : Take the same vote as in the line
I am now correcting.

Examples of the use of the editing feature

(For convenience, we leave out the program messages, but give the program 'prompts').

Ex. 1. Bad checksum

```
D 31 = 31
I 7031,1,1,1 = 7134 (should be = 7034)
  (Bad checksum)
L 0
I      = 7034      (This is accepted)
I 8
```

Ex. 2. Incorrect figures

```
D 31 = 31
I 7031,1,1,2      (the 2 should be 20)
I 7031,1,1,10    (correct)
I 7031,1,1,3     (The 3 should be 30)
I = 21159        (The checksum would have been correct)
  (Bad checksum) (If it were not for the above errors)
L 1              (Re-enter 1st line)
```

Ex. 2. Incorrect figures (continued)

E 7031,1,1,22	(Drat ! Wrong again. The 22 should be 20)
L 1	(Re-enter 1st line again)
E 7031,1,1,20	(correct)
L 3	(Re-enter 3rd line)
E 7031,1,1,30	(correct)
L	(Return)
I = 21159	(Note that at this point, we could if we wished, put in more item entries).

Note: There is no reason why we should not have corrected line 3
before correcting line 1, in the above.

Prompts

A prompt is a single character printed by the program, to indicate the sort of entry the program is expecting. Each prompt usually has a specific message associated with it; however, in order to save time at the terminal, this message is only printed out at specific points in the program, and the rest of the time the prompt alone serves as reminder of what the program requires. Usually the program user knows what prompt will be given and its appearance is merely an indication of mutual assurance.

A further use of the prompt is during document entry check-out after the program run. The prompt here being used to assure that specific entries have in fact been accepted by the program.

The prompts and their meanings are:-

D ~~S~~ENTER DOCUMENT.~~S~~

This prompt invites the user to begin entering a new document (together with its document identifying information).

E (No Message)

This prompt invites the user to enter the 'edit' line to update a previously specified item entry.

For further details, see under the 'Description of Phase II' under the 'Editing Feature'.

I ~~S~~ENTER ITEMS.~~S~~

Thus prompt occurs after a document has been successfully started, and invites the user to enter the individual item entries of a document. If required, a checksum only entry can be entered after this prompt, or the document may be terminated.

L ~~S~~CHANGE WHICH LINE?~~S~~

This prompt invites the user to specify which individual item entry he would like to update, after he has given an incorrect checksum.

For further details, see under the 'Description of Phase I' under the 'Editing Feature'.

Prompts (cont.)

R (Error Message)

This prompt informs the user that the previous line entered has been rejected (for the reason stated by the immediately preceding message) - and invites the user to re-enter the rejected line. (Of course, the user may carry on with a different line if he so wishes, but in general this will make the pre-calculated checksums incorrect).

(This prompt can follow to any of the other prompts, including itself).

S \$PLEASE GIVE CHECKSUM.\$

This prompt demands the entry of a checksum, and only a checksum, as the internal buffers are full and there is no more room for any more individual item entries.

(Once a checksum has been given, however, these buffers become re-usable).

(No Message)

This prompt indicates that there has been a transmission error, and thus the line just entered could not be accepted. This prompt should thus be treated as the 'R' prompt.

No prompt

This indicates that something is wrong (presumably on the terminal line) and it is thus recommended that blank entries (by repeatedly pressing carriage return) be sent to the program until a suitable prompt is returned.

How to get out of difficulties

It can sometimes happen, either through loss of program messages, or through the complexities of using new features in the program that the user 'gets lost', and he finds that nothing he enters is acceptable, or possibly worse, the program seems to accept some things and the user hasn't the slightest reason why.

In order to get out of such a situation the following steps are designed to put the user in a position where he can enter a new document from the beginning. Needless to say, the use of common sense may obviate the necessity of going through the whole procedure.

Step I Enter 9.9
 If the program replies \$INV DOC CODE.\$ Go to Step VI
 If it replies \$BAD LINE NO. \$ Go to Step V.

Step II Enter %\$
 If it replies \$ENTER DOCUMENT.\$ Go to Step VI.

Step III Enter = 1 (Or another invalid checksum).

Step IV If you still can't see where you are through the
 messages, go to Step I.

If Step IV is entered a 2nd time, get help.

Step V Enter 0 (or blank) to get out of Edit, then enter
 %\$ to get out of item entry.

You should now get the message \$ENTER DOCUMENT.\$

Step VI You are ready to enter a new document.

Document Description

Input takes the form of documents that are entered in relatively free-format. The format is free in that entries do not have to appear in specific 'columns'. The format is restricted in that only recognised documents may be entered, and that each document has its own specific format specifying how many entries are required and in what order they must be entered.

The general format for a document is:-

Prompt given
by Terminal

D	Doc-No.	[<u>Entry</u>	,	document identifying information	[.....]]	
		[= checksum]				
I	information 1	[,	information 2]	[= checksum	
I	"	"	"	"	"	"	"	
I (last entry)	information 1	[,	information 2]	=	checksum	
		{	checksum is mandatory on last entry				}	
I	[= document checksum]	\$				

Note:- Updates to System tables, carry no checksums.

In the description of each document that follows, the following conventions are used:-

- (i) Items before the half line are the document identifying information. They must be entered on a single line in response to the 'D' prompt.
- (ii) Items after the half-line are the individual item entries. They must be entered on a single line in response to the 'I' prompt. These lines may be entered as often as required, subject to the maximum number that can be entered without giving any checksum. (The program will demand a checksum if you try to exceed the maximum).
- (iii) The range of a numeric entry not only gives the size of the number that may be entered, but also indicates whether the number to be entered must be a whole number or not.

If a whole number is to be entered (e.g. a Vote), the range is given in whole numbers, and when entered the number must not contain any digits after the decimal point (in fact, the decimal point should be omitted).

If a fractional number is allowed (e.g. an amount paid), the range is given with two decimal places, and when entered the number may contain no, one or two digits after the decimal point (if there are no figures after the decimal point, the decimal point need not be entered).

Further: the range is given with embedded commas so as to improve readability. In practice these commas must not be entered with the number, as they are field delimiters. (i.e. The entry 1,100 will not be read as one thousand one hundred, but as two entries, the first entry being the number 1, and the other, the number 100).

(iv) The Default column shows whether an entry may be specified by default.

- means that it cannot be specified by default, and if left blank, the associated entry will take the value of blank (or zero if numeric).

D means that the entry may be specified by default by leaving the associated field blank. The entry value used by default is not added into the checksum.

D+ means the same as D, except that the default value which this entry takes, will be added into the checksum.

(v) The abbreviation 'chars' means 'characters' or 'letters'.

(vi) In order to save repeating large numbers in the range, the following letters are used.

A = 9,999,999 and B = 9,999,999.99

(vii) The maximum range for any checksum is $\pm 9,999,999,999,999.99$ and with no more than 13 digits specified explicitly.

A checksum of zero (0) is ignored and no action is taken, and the program awaits further entries.

(viii) The Source number, where given, refers to the C.S.I.R. code number for the document. It also appears on the 'Yellow Sheets' to aid cross-checking.

Document 1. Division Job Cards Times (Blue Sheets).

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document Number (1)	=1	D
	2	Division of Staff Members	7000 to 7199	D (Same division as in the last document of this kind)
<hr/>				
I	1	Rank	Up to 5 chars.	D
	2	Name & Initials	Up to 25 chars.	D
	3	Division	7000 to 7199	D+
	4	Project	1 to A	D+
	5	Hours worked on above divin./Project	- 999.99 to 999.99	-

Maximum number of item entries before giving checksum = 44

Note:-

- (i) Fields 3 to 5 of the individual item entries may be repeated as often as required (or not at all) on the same typed line.
- (ii) Field 2 of the Document entry: The default value is taken to be that division that was entered in field 2 of the document header in the most recent Document 1, 21, 22.....entered in the same session.
- (iii) When calculating the number of individual items entered, take note that each sequence of fields 3, 4, 5 counts as one individual item entry.

Thus in this document it is possible to enter more than one individual item entry per typed line.

- (iv) If the hours worked exceeds the given range (for example when a class of people e.g. drivers are entered under one name); that entry must be split,
e.g. 1,000 hours must be entered as 900 and 100 hours, say.

Document 1 (Continued)

- (v) This entry also causes an 'Amount in Rands' entry to be created internally. This figure is obtained from the hours worked (I5), and the rate per hour for the given rank (I1). The rate was originally entered through document 40.
- (vi) The division, rank and name must match that which was originally entered under Document 20. However, the rank may be given in either English or Afrikaans, irrespective of how it was originally given.
- (vii) Internally the program, assigns a vote of 100, and an internal Account code of 1 to each entry.

Document 2 Order form.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document Number (2)	=2	D
	2	Date of Document	1/1/1 to 31/12/99	-
	3	Order number + Extension No.	1 to A (See Note (i))	-
<hr/>				
I	1	Vote	1 to 999	D+
	2	Division	7000 to 7199	D+
	3	Project	1 to A	D+
	4	Estimated Cost	-A to A	-

Maximum number of entries before giving checksum = 47

Note:- (i) The Order number and extension number are entered packed together, e.g. an order number of 700123 on the 3rd extension, is entered as 7001233. If there were no extension number, it is entered as it stands (with no trailing 0). The number is considered in the same way for checksum purposes.

Document 3 Supplier's Invoice.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document Number (3)	=3	D
	2	Date of Invoice	1/1/1 to 31/12/99	-
	3	Invoice number	1 to A	D
	4	Supplier's code number	1 to 99,999	D
	5	Order number + Extn. No.	1 to A	-

I	1	Vote	1 to 999	D+
	2	Division	7000 to 7199	D+
	3	Project	1 to A	D+
	4	Invoice amount for item	- B to B	-
	5	Original estimated Cost	- A to A	-

Maximum number of item entries before giving checksum = 23

Note:- (i) When the Invoice number (D3) and/or the Supplier's code number (D4) are given by default, the value of the field is obtained from the most recent document header that contained this information.

(ii) See Note (i) on Doc. 2 about the Order number.

Document 4 Payment Order.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (4)	=4	D
<hr/>				
I	1	Serial number of form	1 to A	D+
	2	Order number + Extn. No.	1 to A	-
	3	Vote	1 to 999	D+
	4	Division	7000 to 7199	D+
	5	Project	1 to A	D+
	6	Amount of Payment	- B to B	-

Maximum number of item entries before giving checksum = 32

- Notes:-
- (i) The format of this document is slightly different to the original format. The differences are
 - a. The serial number (I1) above, was part of the document identifying information (D2).
 - b. A cheque number was also given in the document identifying information (D3).
 - c. The date of the payment transaction was given in the item entry (used to be I1).
 - (ii) Because of Note (i) above, two extra fields are now allowed for in the internal representation of the document. Under the present program version these two fields (cheque number and date of payment) are zeroed in the internal format.
 - (iii) Further to Notes (i) and (ii) above, the coding to process these two extra fields has been left in the program. This coding can be re-activated by program changes involving removing branch statements that jump over this coding. Notes are given as comments within the program to facilitate this.
 - (iv) See Note (i) on Doc. 2 about the Order number.

Document 5 Petty Cash Book.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (5)	=5	D
	2	Page serial number	1 to A	D
<hr/>				
I	1	Reference number of item	1 to 99,999	-
	2	Vote	1 to 999	D+
	3	Division	7000 to 7199	D+
	4	Project	1 to A	D+
	5	Amount of Petty Cash	- B to B	-

Maximum number of item entries before giving checksum = 38

- Notes:-
- (i) The format of this document is slightly different to the original document. Originally, an order number could be entered after the reference number (I1) just before the Vote (I2).
 - (ii) Because of Note (i) above, the order number field is zeroed out and the previous coding to process the order number is skipped over. To re-activate this coding, two program statements must be removed. There is a comment within the program to facilitate this.

Document 6 Computer Charges.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (6)	=6	D
	2	Serial Computer Account number	1 to A	D
<hr/>				
I	1	Division	7000 to 7199	D+
	2	Project	1 to A	D+
	3	Job number	0 to 99,999	-
	4	Amount charged by computer	- B to B	-

Maximum number of item entries before giving checksum = 47

- Notes:-
- (i) The job number (I3) is an addition to the original document format. Its field may be left blank (still there positionally however), in which case its zero value is acceptable to the program. This was done to have compatibility with documents entered under the old format.
 - (ii) In the case of default entry, the computer Account number (D2) is taken from the most recent use of a Serial number in document identifying information.
 - (iii) This document causes extra documents numbered 31 to be produced. The purpose is to make the budget value for a computer expense match the actual expenditure within each division-project. To this end, the Computer account 7031/4238 has the corresponding budgeted value subtracted off its initial value. The net result is that budgeted amounts are transferred from the division project 7031/4238 to the appropriate division-projects, so that their expenditure should balance.
The budgeted figure in 7031/4238 reflects how much remains unspent in the computer account.
 - (iv) Internally the program assigns a vote of 128 and an internal account code of 2 to each entry.

<u>Document 7</u>		Vehicle Mileages.	(Source 60)	
	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (7)	=7	D
	2	System Code number of vehicle	1 to 254	D
<hr/>				
I	1	Date of vehicle transport	1/1/1 to 31/12/99	-
	2	Mileage travelled	-99,999 to 99,999	-
	3	Division	7000 to 7199	D+
	4	Project	1 to A	D+

Maximum number of item entries before giving checksum = 44

- Notes:-
- (i) The System Code number for the Vehicle (D2) corresponds to the number previously entered under a document 42 (q.v.).
 - (ii) It is necessary to start a new document for each different vehicle.
 - (iii) An 'Amount' figure is created internally to reflect the cost of the trip. It is calculated from the Mileage travelled and the rate per mile for that vehicle as entered through document numbered 42.
 - (iv) Internally the program assigns as Vote of 130, internal account code is taken from the corresponding Document 41 entry which assigned the code.

Document 8 Cancellations of Supplier's Accounts. (Source 35)

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (8)	=8	D
	2	Serial number of cancellation sheet	1 to A	D
<hr/>				
I	1	Order number & Extension no.	1 to A	-
	2	Vote	1 to 999	D+
	3	Division	7000 to 7199	D+
	4	Project	1 to A	D+
	5	Original estimated cost	- A to A	-

Maximum number of item entries before giving checksum = 47

Notes:- (i) The original estimated cost (I5) should reflect the same figure that was originally entered usually under document 2 or 10.

(ii) The figure for the original estimated cost (I5) will be subtracted from the total commitments figure for the associated division-project.

(iii) This document is a 'mirror image' of document 10, the only differences are:-

a. The Serial number (D2) is that on the cancellation sheet and

b. The Estimated Cost (I5) is subtracted from instead of added to other commitments figures.

(iv) See Note (i) on Doc. 2 about the Order number.

Document 9 Journal Entries or Adjustments.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document (9)	=9	D
	2	Serial number of Document list	1 to A	D
<hr/>				
I	1	Order number & Extension number	0 to 99999919 (See Note (i))	-
	2	Vote	1 to 999	D+
	3	Division	7000 to 7199	D+
	4	Project	1 to A	D+
	5	Amount	- B to B	-

Maximum number of item entries before giving checksum = 38

- Notes:- (i) The order and extension numbers (11) are entered together with no intervening comma. Thus an order number of 701234 on the 5th extension, is entered as 7012345 and as such it is added into the checksum. The maximum value of the range of this number is given by the juxtaposition of the maximum order number (999,999) and the maximum extension number (19).
- (ii) It may be useful to note the similarity between this document and document numbered 5. The only internal difference is the document number, and the reference number that is tagged onto the end of the internal representation. (Remember that document 5 used to carry an order number).

Document 10 Commitments: Supplier's Accounts. (Source 22)

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (10)	=10	D
	2	Serial number of Commitment list	1 to A	D
<hr/>				
I	1	Order number and Extension number	1 to A	-
	2	Vote	1 to 999	D+
	3	Division	7000 to 7199	D+
	4	Project	1 to A	D+
	5	Estimated Cost	- A to A	-

Maximum number of item entries before giving checksum = 47

- Notes:- (i) See Note (i) on Doc. 2 about the Order number.
- (ii) This number is a substitute for the use of Document numbered 2. Eventually, this document should become obsolete, as it will be produced by the Accounting system from the Order forms (Document 2).
- (iii) This Commitment is cancelled by the use of document 8.

Document 11 Immediate Payments List: Supplier's Accounts. (Source 35)

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (11)	=11	D
	2	Serial number of List	1 to A	D
<hr/>				
I	1	Order number and Extension No.	1 to A	-
	2	Vote	1 to 999	D+
	3	Division	7000 to 7199	D+
	4	Project	1 to A	D+
	5	Invoiced Amount for item	- B to B	-
	6	Total Amount on invoice	- B to B	-
	7	Supplier's Code Number	1 to 99,999	D+
	8	Invoice number	1 to A	D+
	9	Cost originally estimated for item	- A to A	-

Maximum number of item entries before giving checksum = 23

- Notes:- (i) This document is slightly different to the original form in that the serial number (D2) used to be the date of the document.
- (ii) The cost originally estimated (I9) should be the same as was originally given under document 2 or 10, with an identical order number (I1).

Document 12 Monthly Payments List: Supplier's Accounts. (Source 35)

Identical to Document 11, except for the document number.

Document 20

Update the Staff Table.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (20)	=20	-
<hr/>				
I	1	Previous Division number	7000 to 7199	-
	2	Previous Rank	Up to 5 chars.	-
	3	Previous name	Up to 25 chars.	-
	4	New division number	7000 to 7199	-
	5	New Rank	Up to 5 chars.	-
	6	New name	Up to 25 chars.	-

Maximum number of entries before update is done = 18

(The update is done automatically of this maximum is reached).

- Notes:-
- (i) The first 3 fields of the individual item entry (I, I2, I3) are for previous information on an existing staff member. If any of these fields are left blank, as when creating an entry for a new staff member, they should all be left blank.
 - (ii) The last 3 fields of the individual item entry (I4, I5, I6) are for new information on the staff member who is identified by the information in the first 3 fields (see Note (i) above). If the first 3 fields are blank, it is assumed that the information is for a new-comer to the institute.
 - (iii) If any of the last 3 fields (I4, I5, I6) are left blank, they should all be left blank. In this case, the staff member identified by the first 3 fields is assumed to have 'left the institute'.

Document 20

(Continued)

- (iv) When both halves of the individual item entries contain names, the old name will be replaced by the new name.
- (v) If a staff member changes his division and/or his rank and/or his name, his previous designation must be given in FULL in the first 3 fields, and his new designation given in FULL in the last 3 fields. (Unchanged information must be repeated).
- (vi) The division, rank and name given in the last 3 fields will appear in the 'Time Reports'.
- (vii) No checksums are required for this document.
- (viii) The second level password is required for this document. If it has not yet been given during the program run, it will be requested after the document header line.

Document 21 Add to Budgeted time figures.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (21)	=2	D
	2	Division of Staff Member	7000 to 7199	D
<hr/>				
I	1	Rank	Up to 5 chars.	D
	2	Name & Initials	Up to 25 chars.	D
	3	Division	7000 to 7199	D+
	4	Project	1 to A	D+
	5	Number of hours budgeted on above division/project	-99,999 to 99,999	-

Maximum number of item entries before giving ~~checksum~~ = 44

- Notes:-
- (i) This document causes the hours entry to be added to what has already been budgeted for the division-project (Zero if nothing has yet been budgeted).
 - (ii) Hours are also converted into 'Amounts in Rands' for later addition to the Salary account of the division-project.
 - (iii) See all the Notes under Document 1 (Job Cards Times).

Document 22 Adjust Accumulated Times.

Layout and notes are precisely the same as Document 1 (Job Cards Times).

Additional Notes

- (i) This document alters the Accumulated times in the same way as Document 1. However, the monthly figures are not changed.
- (ii) This document does not affect figures in the Accumulated Expenditure file.
- (iii) Usually used to correct an error that occurred in an earlier month.

Document 23

Insert Budgeted time figures.

Layout is precisely the same as Document 21 (Add to Budgeted Time figures).

Notes:-

- (i) This document causes the entry to replace the hours budgeted for a specific division project.
- (ii) This document does not affect any figures in the Accumulated Expenditure File.
- (iii) See all the Notes under Document 1 (Job Cards Times).

Document 24 Special form of Document 22.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (24)	=24	-
	2	Division of Staff Members	7000 to 7199	D
<hr/>				
I	1	Rank	Up to 5 chars.	D
	2	Name & Initials	Up to 25 chars.	D
	3	Division	7000 to 7199	D+
	4	Internal Code of Project	1 to 254	-
	5	Hours worked on division-project	- 999.99 to 999.99	-

Maximum number of entries before giving checksum = 44

- Notes:-
- (i) This document performs the same function as Document 22. The difference is that instead of giving a project number and leaving the program to fill in the internal code, the internal code (I4) is given by the user.
 - (ii) The use of this document should be confined to amending figures under those division projects that are no longer directly accessible, e.g. because they have been cancelled .
 - (iii) The default document number is not applicable here, as the use of the default would refer to Document 22.
 - (iv) See Notes under Document 22, and hence also under Document 1.

Document 25 Special form of Document 23.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (25)	=25	-
	2	Division of Staff Members	7000 to 7199	D
<hr/>				
I	1	Rank	Up to 5 chars.	D
	2	Name and Initials	Up to 25 chars.	D
	3	Division	7000 to 7199	D+
	4	Internal code of Project	1 to 254	-
	5	Number of hours budgeted on division project	- 99,999 to 99,999	-

Maximum number of item entries before giving checksum = 44

- Notes:-
- (i) This document performs the same function as Document 23. The difference is that instead of giving a project number and leaving the program to fill in the internal code, the internal code (I4) is given directly by the user.
 - (ii) The use of this document should be confined to amending budgeted figures under those division projects that are no longer directly accessible, e.g. because they have been cancelled.
 - (iii) The default document number is not applicable here, as the use of the default would refer to document 23.
 - (iv) See Notes under document 23 and hence also under document 1.

Document 26

New form of Document 1.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (26)	=26	-
	2	Division	7000 to 7199	D
	3	Division	7000 to 7199	D+
	4	Projects	1 to A	-
<hr/>				
I	1	Rank	Up to 5 chars.	D
	2	Name and Initials	Up to 25 chars.	D
	3	Index of Division project in above list	1 to 9999 (See Note (vi))	-
	4	Hours worked on above division project	- 999.99 to 999.99 -	-

Maximum number of items entries before giving checksum = 44

- Notes:-
- (i) The default document number is not applicable here, as the use of the default would refer to document 1.
 - (ii) In the document identifying information, the 3rd and 4th fields (D3,D4) can be repeated as often as necessary (subject to the restriction that the whole document header must fit onto one typed line).
 - (iii) The default division in D3 is taken from the last explicitly given division number. Thus D3 may or may not be the same as D2 depending whether D2 is given explicitly or not. If D5 is given by default, it will be the same as D3.
 - (iv) In the individual item entries, the 3rd and 4th fields (I3,I4) can be repeated as often as necessary.
 - (v) The indices of division project (I3) can appear in any order, and index n say, refers to the nth division project as given in the list (D3,D4).

Note:- The list of division-projects (D3,D4) will refer to all the projects worked on by members of the division (D2). Items for individual staff members (I3,I4) will consist of subsets of this list.

Document 26 (Continued)

- (vi) The range of the indices (I3) is limited to the number of entries given in the list (D3,D4).
- (vii) The fields (I3,I4) take the place of the fields (I3,I4,I5) in document 1.
- (viii) See Notes under Document 1 for further relevant information.

Document 30

Update the Division project table.

<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D 1	Document number (30)	=30	D
<hr/>			
I 1	Previous division number	7000 to 7199	-
2	Previous project number	1 to A	-
3	New division number	7000 to 7199	-
4	New project number	1 to A	-
5	Description of new division project	Up to 30 chars.	-

Maximum number of entries before update is done = 19

(The update is done automatically if this maximum is reached).

- Notes:-
- (i) The first two fields of the individual item entry (I1,I2) reflect the old designation of an existing division project. If either of these fields are left blank, e.g. when creating a new division-project, they should both be left blank.
 - (ii) The last 3 fields of the individual item entry (I3,I4,I5) reflect the new designation of the division project given in the first 2 fields. (See Note (i) above). If the first 2 fields (I1, I2) were blank, it is assumed that the information is for a new division-project.
 - (iii) If any of the last 3 fields (I3,I4,I5) are left blank, they should all be left blank. In this case, the division project designated by the first 2 fields (I1,I2) is assumed to have been completed or cancelled.
 - (iv) When both halves of the individual item entries contain division projects, the amounts in the Accumulated Expenditure file for the old division project will be transferred to the new division project.

Document 30 (Continued)

- (v) If the description of a division project changes, the change must be made using this document. If the division and project numbers do not change, it is necessary to make use of a temporary dummy division project. The original project is first transferred to the dummy project, and then the dummy project is transferred to a new project with the original division project number and the new description.
- (vi) The division project and its description as given in the last 3 fields (I3,I4,I5) appear in the 'Expenditure Report'.
- (vii) No checksums are required for this document.
- (viii) The second level password is required for this document. If it has not yet been given during the program run, it will be requested after the document header line.

Document 31 Add to Budget Expenditure figures.

<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D 1	Document number (31)	=31	D
<hr/>			
I 1	Division	7000 to 7199	D+
	2 Project	1 to A	D+
	3 Internal Account Code	1 to 254	-
	4 Amount Budgeted	- A to A	-

Maximum number of item entries before giving checksum = 100

- Notes:-
- (i) This document causes the entry to be added to the Amount Budgeted (I4) against a specified Division project and Account code.
 - (ii) The internal Account code (I3) corresponds to the Account codes that have been entered in document 41. Notes the Account code is NOT the Vote, but usually refers to a group of Votes, e.g. Account code 1 is Salary. Account code 2 is Computer Costs, etc.

Document 32

Adjust Accumulated Expenditure.

<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D 1	Document number (32)	=32	D
<hr/>			
I 1	Division	7000 to 7199	D+
2	Project	1 to A	D+
3	Internal Account Code	1 to 254	-
4	Amount	- B to B	-

Maximum number of item entries before giving checksum = 100

Notes:-

- (i) The document causes the amount given (I4) to be added to the accumulated expenditure figure for the given division project and account code. The monthly figure is left unchanged.
- (ii) To be used as a special way of amending figures. The proper way is through a Journal entry (Document numbered 9). A journal entry (Document 9) uses a vote number, whilst this document (Document 32) uses the internal account code, which can be obtained from a listing of the Votes table.

Document 33

Insert Budget Expenditure figures.

Layout is precisely the same as Document 31 (Add to Budget expenditure figures).

Notes:-

(i) This document causes the entry to replace the amount budgeted against a specific division project and Account code.

(ii) See Note (ii) of Document 31.

Document 34 Special form of Document 32.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (34)	=34	-
<hr/>				
I	1	Division	7000 to 7199	D+
	2	Internal Code of Project	1 to 254	-
	3	Internal Account Code	1 to 254	-
	4	Amount	- B to B	-

Maximum number of item entries before giving checksum = 100

- Notes:-
- (i) This document performs the same function as document 32. The difference is that instead of giving a project number and leaving the program full in the internal code, the internal code (I2) is given directly by the user. Similarly the Internal Account code must be given instead of the Vote.
 - (ii) The use of this document should be confined to amending figures under those division projects that are no longer directly accessible, e.g. because they have been cancelled.
 - (iii) The default document number is not applicable here, as the use of the default would refer to document 32.
 - (iv) See Notes under document 32.

Document 35 Special form of Document 33.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (35)	=35	-
<hr/>				
I	1	Division	7000 to 7199	D+
	2	Internal Code of Project	1 to 254	-
	3	Internal Account Code	1 to 254	-
	4	Amount	- A to A	-

Maximum number of item entries before giving checksum = 100

- Notes:-
- (i) The document performs the same function as document 33 except that instead of project and votes, their corresponding internal codes must be given.
 - (ii) The Notes for Document 34 are applicable here, except that references to Document 32 should be taken as references to Document 33.

Document 36

Special form of Document 8.

Layout is the same as for Document 35 (Special form of Document 33).

Maximum number of item entries before giving checksum = 47.

- Notes:-
- (i) This document performs the same function as document 8 except that instead of project and votes, their corresponding internal codes must be given.
 - (ii) The Notes for Document 34 are applicable here except that references to document 32 should be taken as references to Document 8 (Cancellations).
 - (iii) Other fields that are normally entered through document 8, are blanked out internally by the program.
 - (iv) As this document follows document 8 internally, the amount given in the individual item entry I4, will be subtracted from the commitments for the associated division project and Account Code.

Document 41

Amend the Vote table.

<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D 1	Document number (41)	=41	D
<hr/>			
I 1	Vote	1 to 999	-
I 2	Internal Account Code	1 to 254	See Note (vii)

There is no maximum number of item entries allowable. (However, it is advisable to end the document periodically in order to complete the update).

- Notes:-
- (i) The second level password is required for this document. If it has not yet been given during the program run, it will be requested after the document header line.
 - (ii) No checksums are required for this document.
 - (iii) The vote (I1) refers to the C.S.I.R. vote numbers.
 - (iv) The internal account code (I2) is usually assigned to a group of votes that are to be grouped together for the production of expenditure reports.
e.g. Subsistence and Transport is formed by grouping together votes from 130 to 139 under a common internal account code.
 - (v) The program assumes that Internal Account code 1 = Salaries
and
Internal Account code 2 = Computer Costs.
These are fixed in the program.
Assignments of Votes to Account codes should take this into account.

Document 41

(Continued)

- (vi) The 'order' of the Account codes i.e. their numerical values reflect the order in which the account codes will be presented under each division project in expenditure reports.
- (vii) Leaving the Internal Account Code field (I2) blank, will cause the Vote (I1) to be removed from the list of allowable votes.
- (viii) A list of allowable votes and their assigned internal codes is given in Appendix B of 'An Accounting Program for the N.I.P.R. - Special Report No. 98'.

Document 42

Amend the Vehicle Table.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (42)	=42	D
<hr/>				
I	1	Vehicle code number	1 to 254	-
	2	Tariff in cents/mile	- 99.9 to 99.9	-

There is no maximum number of item entries allowable. (However, it is advisable to end the document periodically in order to complete the update).

- Notes:-
- (i) The second level password is required for this document. If it has not yet been given during the program run, it will be requested after the document header line.
 - (ii) No checksums are required for this document.
 - (iii) The vehicle code number (I1) is user assigned to refer to a specific vehicle.
 - (iv) The tariff for the vehicle is given in cents per mile, correct to the nearest 0.1 cent.

Document 50

Enter the Password.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (50)	=50	-
	2	Password	Up to 30 chars.	-

- Notes:-
- (i) There are no individual item entries.
 - (ii) No checksum is required.
 - (iii) The document is self-terminating (i.e. No end of document symbol '\$' is required after this document).
 - (iv) This document can only be entered when requested by the program.
It is requested at the beginning of the program run, and if an update document is entered when the second level password has not yet been given during the program run.
 - (v) There is no by-passing this document. Once it is requested, a valid password must be given within 3 tries, otherwise the program terminates.
 - (vi) Once the Second Level password has been given, this document will not be requested again during the run.
 - (vii) When the request for this document is triggered by a user wanting to update the system tables,
if (a) the second level password is given the update can proceed,
and if (b) the first level password is given the update is rejected.
 - (viii) The password must be given either as initialised (if they have never been changed) or from the latest update to the passwords as given by a document 51.
 - (ix) See discussion on 'Passwords' earlier in this manual.

Document 51 Change the Passwords.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (51)	=51	D
<hr/>				
I	1	First level password	Up to 30 chars.	-
	2	Second level password	Up to 30 chars.	-

Notes:-

- (i) There is only one individual item entry.
- (ii) The document is self-terminating (i.e. No. end of document symbol '\$' is required after this document).
- (iii) No checksum is required.
- (iv) The passwords may contain any characters except commas (,).
- (v) The two passwords should be different.
- (vi) See discussion on 'Passwords' earlier in this manual.

Document 52

Week Month document.

	<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D	1	Document number (52)	=52	D
	2	Week of entry	1 to 54	-
	3	Month of entry	0 to 12	-

Notes:- (i) This document is requested at the beginning of the program run.

(ii) When entered in the middle of a run, a new sub-block is created in the Monthly file.

(iii) The Month of entry (I3) may be set to zero for the budget entries.

(iv) This document causes an internal document to be generated with a document number of 254 and a length of 55 bytes:-

Bytes	1	=	Document number = 254
	2 - 3	=	Entry number = 1
	4 - 5	=	Week (as given on document)
	6 - 7	=	Month (as given on document)
	8 - 23	=	Date and time of entry into monthly file of this block.
	24 - 33	=	Date and Time of Accumulated Times Update.
	34 - 43	=	Date and Time of Accumulated Expenditure Update.
	44 - 53	=	Date and Time of Supplier's File Update.
	54 - 55	=	Reserved.

Document 53 Close All Files.

<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D 1	Document number (53)	=53	D
(2	Message choice	numeric	-)

- Notes:-
- (i) There are no individual item entries.
 - (ii) No checksum is required.
 - (iii) The document is self-terminating (i.e. No end of document symbol '␣' is required after this document).
 - (iv) The purpose of the document is to close all the program files (except the user's terminal). If a 'crash' occurs, nothing will be lost from before the point that the files were closed.
 - (v) The second entry in the document identifying information (D2) is an optional entry. Action (see below) is taken depending on whether or not the entry is specified. If it is specified, it does not matter what it is.
 - a. If it is not specified (i.e. just '53' is entered). The program will produce an indicative dump of what is in the Well when it is re-opened.
 - b. If it is specified (i.e. '53,' is entered). The dump mentioned in (a) above is suppressed. For further details about this dump, see under Message :
 ␣ENTRY NO. xxx FOUND.␣)

Document 54 Write Message to Computer Operator.

<u>Fields</u>	<u>Contents</u>	<u>Range</u>	<u>Default</u>
D 1	Document number (54)	=54	D
<hr/>			
I 1	Message to be given to operator	1 to 99 chars. See Note (iv)	

- Notes:-
- (i) There is only one individual item entry.
 - (ii) The document is self-terminating
(i.e. No end of document symbol 'Ø' is required after this document).
 - (iii) No checksum is required.
 - (iv) If the length of the message is out of range
(No message, or greater than 99 letters), the message is not sent.

Messages

This is a list of all possible messages.

For further details, the 'white cards' should be consulted if the program logic of the message is required.

The list is divided into 'Correct' and 'Error' messages.

a) Correct Messages

Messages given on the terminal for information are:-

- (i) Heading and Termination messages.
- (ii) Program requests.
- (iii) File usage.
- (iv) Program action taken under special circumstances.

1. *⌘* ALL FILES CLOSED *⌘*

Given in response to document number 53, after the request has been carried out successfully.

⌘ CHANGE WHICH LINE? *⌘*

Request from the 'Editing Feature' (q.v.) asking which line is to be changed.

The reply should either be a line number to be changed, or a blank (zero) to exit from the editing feature. This message is followed by a prompt of 'L'.

2. *⌘* DISC BUFFER POSITIONED.*⌘*

This message is issued when opening the Well on disk, and after giving an indicative dump of the contents of the Well (See *⌘* ENTRY NO xxxx FOUND.*⌘*)

If there were entries in the Well, this message shows that the place to enter the next document has been found.

3. *⌘* DOC CHECKSUM RESET TO ZERO *⌘*

When adding item checksums to form a document checksum (which is done, whether or not a document checksum is given), the field containing the total, overflowed and was therefore reset to zero.

The range of the total is - 9,999,999,999,999.99 to

+ 9,999,999,999,999.99

i.e. $-(10^{13} - 1)$ to $+(10^{13} - 1)$ to 2 decimal places.

4. $\text{\textcircled{X}}$ DOCUMENT CHECKSUM IS CORRECT. $\text{\textcircled{X}}$

The document checksum at the end of the document agreed with the total calculated by the program.

5. $\text{\textcircled{X}}$ ENTER DOCUMENT. $\text{\textcircled{X}}$

The program is ready to accept a new document (in the form of a document number and possibly, other document identification) or an end of run symbol (*).

6. $\text{\textcircled{X}}$ ENTER ITEMS. $\text{\textcircled{X}}$

The program has accepted a document number and other document identification. Individual items or if the previous entry contained a checksum, an end of document symbol ($\text{\textcircled{X}}$) may be given.

Note: An end of run symbol (*) will not be accepted until the end of document symbol ($\text{\textcircled{X}}$) has been given first.

7. $\text{\textcircled{X}}$ ENTRY NO. xxx FOUND. $\text{\textcircled{X}}$

Whenever the Well or disk is opened an indicative dump of its contents is taken. xxx is the entry number and is the same as the 'xxx' of the message $\text{\textcircled{X}}$ ENTRY xxx. $\text{\textcircled{X}}$ The entries printed out in this message, either were at the end of a 260 byte block; or were the last entry in the input well.

The last message of this type is followed by the message $\text{\textcircled{X}}$ DISC BUFFER POSITIONED. $\text{\textcircled{X}}$. (q.v.)

$\text{\textcircled{X}}$ ENTRY xxx. $\text{\textcircled{X}}$

Items written to the input buffer, are given a sequence number. The number given to the last entry in a block (or in the case of update entries; to each entry) is printed out in this message as xxx.

Note: (i) The week-month document is always numbered 1. It may be written immediately, or deferred, depending on when the week-month document is given.

- (ii) When the last entry-number reaches 999, it is reset to 1 and a new week-month document is written at the beginning of this block. (It will be the same as the one at the beginning of the previous block.)
- (iii) Document number 6 for Computer Charges, causes additional records to be generated for adjusting the budgeted values for the computing account. Thus one item entry from document 6 causes two (2) records to be written into the Well (the 6 document and a 31 document).

§ LAST ENTRY DELETED. §

A hash sign # as the first and only entry on a line, delete the last entry in the input buffer in core.

Note that no attempt is made to remove the deleted entry from the checksum.

§ MESSAGE GIVEN TO OPERATOR. §

The message that was entered in document 54 was typed out on the operator's console. The program will now request a new document.

§ NEW-NAME IS IN TABLE - WARNING. §

When entering the document to amend the staff table, (document 20), a 'new' staff name is already in the table (i.e. in file CONAM). The new staff name will not be added to the table, and the 'old' staff name, will be deleted.

The document will be entered in the Monthly file as usual.

§ NEW CONTRACT IS IN TABLE - WARNING. §

When entering the document to amend the division project table (document 30), a 'new' project is already in the table (i.e. in file CONAM). The new project will not be added.

Note that if an 'old' project is included in the entry, it will be deleted).

The document will be entered in the Monthly file as usual.

§ NIPR ACCOUNTING INPUT SCHEME DATE dd-mm-yy

TIME hh.nn.ss GOOD-BYE! §

The last message printed out by the program.

Date and time are similar to the message ending with WELCOME instead of GOOD-BYE and show the time that the console user signed off.

After this message has been given, records that should be written away, are written, and open files are closed.

The terminal is then 'closed' and the program stops.

```
§ NIPR ACCOUNTING INPUT SCHEME DATE dd-mm-yy
TIME hh-nn-ss WELCOME! §
```

The first message printed out by the program.

```
The date and time: dd = day
                   mm = month
                   yy = year
                   hh = hour
                   nn = minute
                   ss = second
```

gives the time that the program started according to the computer's clock.

```
§ NONE TO BE DELETED - IGNORED. §
```

A hash sign (~~#~~) as the first and only entry on a line, is a request to delete the last entry in the input buffer in core (see earlier discussion under "Special entries"). If there are no entries in the buffer in core this message follows, and the request to delete is ignored.

```
§ OK. §
```

The checksum just entered is correct, all preceding entries have been accepted. This message is usually accompanied by the message

```
§ ENTRY xxxx §
```

```
Password 1
```

```
password 2
```

```
§ NOW TRY AGAIN. §
```

This is a display of the valid passwords.

password 1 is the 1st level password.

password 2 is the 2nd level password.

The last message indicates that a suitable password should be chosen, and entered in the password document. The above message only appears after the use of a special key.

⌘ PLEASE GIVE CHECKSUM. ⌘

This is a request for a checksum. If it is followed by the prompt 'S', only a checksum may be entered. (See 'S' under discussion of prompts). If it is followed by the prompt 'I', then a complete item, optionally followed by a checksum, is required. This happens when a document delimiter is given before a final checksum.

⌘ PLEASE GIVE PASSWORD DOCUMENT. ⌘

This is a request for the password document, (document number 50)

This request is issued

- (i) At the beginning of the program.
- (ii) After encountering an update document in the input, and the level of the password is not correct for this update (See discussion under 'Password').

A valid password document must be given within 3 tries, otherwise the program terminates.

In the case of (ii) above, if the update document was not required, re-entering the lower password will cause rejection of the update document, and processing can continue with another document.

⌘ RANDOM UPDATE COMPLETED. ⌘

The indexed sequential table CONAM (Projects and Staff names) has been successfully updated and the file has now been closed.

Notes: (i) An error following this message cannot lose the update.

(ii) At the end of the run, this file (CONAM) should be saved on a back-up tape.

(iii) The file may need 're-organising'.

⌘ RANK IS IN TABLE - CODE WILL BE CHANGED - WARNING. ⌘

When entering the document to amend the Rank table (document 40),

a new rank (5 alpha-numeric characters) is already in the table. Program action continues as usual, and the code associated with this rank will be changed to the new rank. This message is only for information.

§ RANK TABLE FULL - DELETE SOME. §

When trying to add a new rank (5 character alpha-numeric) it was found that the table was full (only 102 different Ranks may be entered). It must be 'refreshed' by deleting ranks that are no longer used.

§ RANK WILL BE DELETED. §

When entering the document to amend the Rank table (document 40), the new code (2nd positional entry) was omitted (or equal to zero). The rank in the table will be deleted. Any salary given with this entry will be ignored.

§ SUBTRACT LAST KEPTAMOUNT xxxx §

This message results from the entry of a 'double-quote' (") (an upper-case # on the terminal typewriter). It indicates that the last kept amount xxxx in the program, was subtracted from the accumulated checksum.

See under 'double-quote' (") in the discussion of 'Special symbols' above.

§ THANK YOU - NOW PLEASE GIVE WEEK-MONTH DOC. §

This follows a correct password.

A valid week-month document (document number 52) must now be entered.

No further processing is allowed until a valid week-month document has been entered.

§ THANK YOU - NOW WE CAN BEGIN. §

This signals that valid password and week-month documents have been received and ordinary documents can now be entered.

§ UPDATE COMPLETED. §

The RANKS file on disk has been successfully updated and the file has been closed. Any bomb-out following this message should not affect the file, or cause the update to be lost.

Note: At the end of the run a back-up copy of this file should be saved.

b) Error Messages.Error messages printed on the terminal.General

If a message is not understood, it may be helpful to read the Layout and Notes for the document, in case something is mentioned about the document that was not previously realised.

It is possible for an error to produce an error message not directly associated with the cause.

If an error message does not seem applicable (e.g. BAD DIVISION NO. for a perfectly good division)

check for the following:-

- (i) Missing comma or slash
Note that '/' in an alpha field does not mean a delimiter.
- (ii) Superfluous comma or slash
Note that ',' in an alpha field does mean a delimiter.
- (iii) Omission of a field.
- (iv) Confusion of 0 numeric with 0 alpha.
- (v) Confusion of 1 and I and l.
- (vi) A previous message that was not heeded (e.g. a request for a checksum, or the rejection of a document).
- (vii) A space where there should be none, or no spaces where there should be some.
- (viii) Specifying by default (or equal to zero) where the entry had not been specified before, and thus no default value could be assumed.

Note: When checking a line, do not assume that the program will check the entry from left to right. In many cases, it does not.

The error messages:-

Unless otherwise stated, the line in error is completely rejected, and the program requests re-entry of the line.

§ BAD ACCNT CODE. §

Documents for adjusting amounts or budgets in the Expenditure file, contain an account code that

- (i) used a decimal place
- (ii) was not in the range 1 to 254.

§ BAD AMOUNT ENTRY. §

- (i) A committed or budgeted amount was found which used decimal places.
- (ii) An amount (whether committed or paid) was not in the range -9,999,999.99 to 9,999,999.99 rands.

§ BAD CHECKSUM - REPEAT WEEK-MONTH DOC AGAIN. §

The checksum given with the first week-month document (document 52), does not agree with that calculated by the program.

Note:- Checksum = 52 + week+month.

The document with its checksum, is rejected and must be re-entered.

§ BAD CHECKSUM = THIS CHECKSUM IGNORED - FIX IT UP. §

YOURS yyy MINE mmm.

The checksum (yyy) (other than a document checksum) on the previous line differed from that calculated by the program (mmm).

The program continues either by proceeding into the 'Editing Feature' (see discussion above), or by ignoring all entries since the last given checksum. (The choice of action depends on the type of document entered).

§ BAD CHEQUE NO. §

- Caused by
- (i) Using decimal places where none are allowed.
 - (ii) Using a default value where no default cheque number is available.

⌘ BAD CODED PROJECT. ⌘

The error occurred in a document which picks out the division project from a given list. The error occurred because the given index to the list

- (i) used a decimal place,
- (ii) was negative or zero,
- (iii) was greater than the number of items defined in the list.

⌘ BAD CONTRACT DESCRIPTION. ⌘

When updating the Division project table the descriptive title for the new project contains more than the allowed maximum of 30 characters.

⌘ BAD CONTRACT NO. ⌘

Caused by (i) Using decimal places where none are allowed.

- (ii) (a) The given project was not in the range
1 to 9,999,999
- (b) or in the case of the special editing documents,
the project code was not in the range 1 to 254.
- (iii) The division did not 'match' the given project number.
- (iv) The contract has not yet been entered in the Division-
project table.
- (v) In computer charges (document 6), the computer project
number 7031/4238 had not yet been given to the system
through document 30, or possibly had been deleted.

⌘ BAD DATE. ⌘

A bad date on a document was encountered. The date should be of the form :
dd/mm/yy

where:

- dd = the day : the range is 1 to 31
- mm = the month : the range is 1 to 12
- yy = the year : the range is 1 to 99

Note that no decimal places may be used.

§ BAD DIVISION. §

- Caused by
- (i) Using decimal places where none are allowed.
 - (ii) Division number is not in the range 7000 to 7199.
 - (iii) Was specified by default (zero or blank) but no similar document or division number had been given previously.

§ BAD EDIT. RE-ENTER ITEMS. §

In the 'Editing Feature' (q.v.), a line was being re-entered. The re-entered line, however, was not accepted for the reason given in the message typed before this one. The program now demands that the line to be changed be re-entered again (preferably without repeating the error).

§ BAD EXPECTED CHECKSUM. COL 1 WAS =. §

A typed input line started with an equal sign (=) in column 1. The program then assumed that a 'checksum only' line was being entered. However, subsequent scanning showed that

- (i) The program was in the 'Editing Feature', where checksums are not accepted.
- (ii) The checksum was not the only entry on the typed line.
- (iii) The checksum was not a valid number.
- (iv) The checksum given was equal to zero, which is not accepted.
- (v) No checksum was subsequently given.

§ BAD INVOICE NO. §

- (i) Using decimal places where none are allowed.
- (ii) Using a default which was not available.
- (iii) Not in the range 1 to 9,999,999.

§ BAD JOB NO. §

- Caused by
- (i) Using decimal places where none are allowed.
 - (ii) Not in the range 0 to 99,999.

§ BAD LENGTH OF MESSAGE. §

A message to the computer operator was not sent because the message

- (i) was null, i.e. did not contain any characters,
- (ii) contained more than 99 characters.

§ BAD LINE NO. §

During the 'Editing Feature' in reply to the §CHANGE WHICH LINE? § message, a line number was given that:-

- (i) Used decimal places where none are allowed,
- (ii) was negative,
- (iii) was greater than the number of individual item lines entered since the latest checksum (i.e. trying to update what has not yet been put in).

§ BAD MILEAGE. §

Caused by (i) Using decimal places where non are allowed.

- (ii) Not in the range -99,999, to 99,999 miles.

§ BAD ORDER NO. §

Caused by (i) Using decimal places where none are allowed.

- (ii) Not in the range 1 to 9,999,999.

(See under notes for the document concerned).

§ BAD PASSWORD - NO UPDATE DONE. §

Does not occur. Has been replaced by

§ INCORRECT PASSWORD FOR THIS DOC - DOC REJECTED. §

§ BAD PROJECT/dddd/ppppppp. ONLY USED FOR CHECKSUM.§

When entering staff times the project number (dddd/ppppppp) could not be found in the table of Division-Projects. (Any other reason for its being invalid would give the message § BAD CONTRACT NO.§).

The program therefore uses this project (dddd/ppppppp) only for calculating the checksum.

No entry is generated in the Monthly file for this specific division-project.

§ BAD RANK CODE.§

A rank code in document 40,

- (i) specified decimal places,
- (ii) was not in the range 1 to 254.

(Zero is allowed but this means that the rank should be deleted).

§ BAD REFERENCE NO. §

- Caused by (i) Using decimalplaces where none are allowed.
(ii) Entering a number not in the range 1 to 99,999.

§ BAD SALARY. §

In updating the Ranks - Salary table (document 40) a salary was specified that

- (i) Was negative,
(ii) Was not in the range 0.00 to 9.99 rands.

§ BAD SERIAL NO. §

- Caused by (i) Using decimal places where none are allowed.
(ii) Using a default or zero value where no default value is available.

§ BAD STAFF NAME. §

The staff name is not in the Staff Names table.

Could be due to:-

- (i) The person has not yet been entered in the table.
(ii) The name has been misspelt, or incorrect initials have been given.
(iii) The person has a different rank to that given.
(iv) The person belongs to a different division to that given.

§ BAD STAFF RANK. §

- Caused by (i) The given rank was not found in the Rank table.

§ BAD SUPPLIER CODE. §

- (i) Using decimal places where none are allowed.
(ii) Using a default, which was not available.
(iii) Using a code not in the range 1 to 99,999.

§ BAD TIME-SPENT. §

A staff times document (1,21,22,23,24,25,26), has unacceptable staff times data.

Two cases are distinguishable

A. Document referring to the budget times (21,23,25)

- Possible errors are:-
- (i) Using decimal places where none are allowed.
 - (ii) Using a time not in the range -99,999 to +99,999 hours.

B. Document referring to time spent (1,22,24,26).

- Possible errors are:-
- (i) Time not in the range -999.99 to +999.99 hours.

⌘ BAD VEHICLE NO. ⌘

- Caused by
- (i) Using decimal places where none are allowed.
 - (ii) In the case of the Vehicle mileages document (document 7) using a default where one was not available.
 - (iii) Using a vehicle number not in the range 1 to 254.

⌘ BAD VOTE NO. ⌘

Caused by

- (i) Using decimal places where none are allowed.
- (ii) Using a vote number not in the range 1 to 999.
- (iii) Using a vote not present in the table of votes.
- (iv) In using document 7, Vote 130 did not exist.

⌘ BAD VOTE OR CODE. ⌘

In a document amending the vote (document 41):-

- (i) Decimal places were specified where none are allowed.
- (ii) The vote was not in the range 1 to 999.
- (iii) The vote code was not in the range 1 to 254.

(Note:- If the vote-code is blank or zero, the associated vote is deleted from the table).

§ BAD WEEK-MONTH DOC. §

A week-month document (document 52), not entered for the first time might have :

- (i) Decimal places where none are allowed.
- (ii) The week outside the range 1 to 54.
- (iii) The month outside the range 1 to 12.

§ BAD WEEK-MONTH DOC., TRY AGAIN. §

A format error in the first week-month document (document 52), of the session.

Format should be :-

52 / Week / Month = checksum.
 , ,

where Week = the week of entry, with no decimal places
 in the range 1 to 54.

and Month = the month of entry, with no decimal places,
 in the range 0 to 12.

A faulty checksum (if given) will produce a different error message.

Note:- The Week and Month in the entry

- (i) Are not checked for truthfulness.
- (ii) Are not checked for mutual consistency.
 (i.e. 52, 1, 12 is valid for the program although
 the 1st week does not usually occur in the 12th month).

§ COMMENCING SHUT-DOWN. §

See under message §TOO MANY NAMES - BOMB-OUT OCCURS ON §
 or under message §NEW ADDITION MAKES TOO MANY PROJECTS FOR DIVN. §.

§ DISC BUFFER FULL - COMMENCING SHUT-DOWN. §

The input well on the disk is full, and no more entries can be accepted.
 The program terminates.

User response

Run the program CHECK1 to empty the well into the monthly file, and to re-initialise the buffer.

§ DOCUMENT CHECKSUM IS INCORRECT. YOURS yyyy MINE mmmm.

The user's document checksum, yyyy the sum of all accepted checksums in the document, differs from that calculated by the program, mmmm. This message is for information only, because no program action is taken.

The latest document has, as far as the program is concerned, been completed. The reason for this message should be determined. It may be due to

- (i) omitting items,
- (ii) entering items more than once,
- (iii) because the document checksum over-flowed and was set to zero - see §DOC CHECKSUM RE SET TO ZERO§ under 'Correct' messages.

§ EXCESS.DEC.PLACES. §

A numeric entry contained more than 2 significant digits after the decimal point.

§ EXCESS DIGITS IN NO. §

A numeric entry contained more than 13 significant digits.

§ EXTRA . §

A numeric entry contained more than one decimal point.

(Check for a missing comma, or a full-stop instead of a comma).

§ GET HELP - CLOSING DOWN. §

An incorrect password has been given three times; the program terminates.

§ INCORRECT NO. OF ENTRIES. §

Either too many or too few entries on a line.

Check for missing or misplaced commas or slashes.

Note:- In documents relating to staff times, a line may not end directly after a division number or a project number, but only after a staff name, or a time entry.

⌘ INCORRECT PASSWORD FOR THIS DOC = DOC REJECTED.⌘

A document number referring to table updates (documents 20,30,40,41,42, 51) was entered when only the lower level password had been given. The higher level password was requested, but was not received and the update document is therefore rejected. (See 'password' above).

⌘ INCORRECT PLACEMENT OF CHECKSUM.⌘

A line contains a checksum which is not the last entry on the line.

⌘ INV CHAR.⌘

In a list of numeric entries contained, a character other than:

- (i) The digits 0 - 9.
- (ii) A decimal-point.
- (iii) A comma or equal sign.
- (iv) A backspace or Carriage Return.
- (v) A blank.
- (vi) A plus (+) or minus (-) sign.

⌘ INV DOC CODE.⌘

The document number either

- (i) contained decimal places after the point or
- (ii) was not in the range 1 to 99; or
- (iii) was specified by default (equal to blank or zero), but was the 1st document entered other than those requested by the program.

⌘ INV MINUS SIGN.⌘

A numeric entry contained either (i) more than one minus sign;
or (ii) a minus sign by itself.

⌘ LINE IGNORED.⌘

The last line is ignored, because it ends with the character '?'.
.

⌘ NEW ADDITION MAKES TOO MANY PROJECTS FOR DIVN.⌘

PPP..... PP.

⌘ COMMENCING SHUT-DOWN.⌘

There is no space available in the section of the Division-project table for project pp...pp and so a unique code cannot be assigned to the project. The program terminates.

The program can handle up to 254 different projects referring to any one division.

User response.

Create a dummy division or an alternate division number for the additional projects.

⌘ NO CODING FOR THIS DOC.⌘

This message should only occur if coding is inserted into the program to deal with a document number and "document identifying information", for a new document, but coding for the "individual item entries" is missing or contains an error.

The program resets itself to accept the next document.

⌘ NO NAMES IN FILE = ERROR - COMMENCE SHUT-DOWN.⌘

The staff names file (CONAM) contains no names.

Note:- At initialisation a dummy name is written into the file so that there should be at least one name.

This is an error, and the program terminates.

User response

Check whether the correct file has been offered to the program to read.

⌘ OWING TO ERRORS → DISCONTINUE SERVICE.⌘

Abnormal termination of the program. Usually accompanied by some other message. Causes are:

- (i) the special symbol '➤' has effected an immediated shut-down;
- (ii) the wrong password has been given three times in a row;
- (iii) program errors in which the program finds itself at a loss for what to do.

§ PROGRAM CANNOT HANDLE THIS DOC YET. §

The document number has not yet been defined to the system, or cannot be entered at this point, (e.g. the password document, number 50, was not requested by the program).

§ PROGRAM ERR - TABLE TOO SMALL - DELETE SOME PROJECTS. §

The Division-project table is exceeded. Either some projects must be deleted, or the core allocation for the table must be increased. (This error may occur in other programs of the system).

See section on "Enlarging the project table in core" in the Operating Manual for the Accounting Program, Special Report No. 107.

The program terminates.

§ PROGRAMM MESS - ATTEMPT SHUT-DOWN. §

An error, either in the program or in one of the files, has been detected. An accompanying message is printed out on the computer system console. See "Messages on Computer's System Console" in Operating Manual for the Accounting program Special Report No. 107.

The program terminates.

§ RANK TABLE FULL-DELETE SOME. §

(See "Correct Messages" above).

§ SORRY-WRONG DOC - RETRY. §

After requesting a password document (document No. 50), the program found that the next entry was not a document 50. The entry is ignored and it is not counted as one of the three allowable tries for the password.

§ THINK CAREFULLY AND TRY AGAIN. §

An incorrect password has been given. This message appears twice. The third time the message becomes §GET HELP - CLOSING DOWN. §

§ TOO MANY ENTRIES. §

A line of input contained more than 30 numeric entries.

§ TOO MANY LINES FOR EDIT. LAST LINE IGNORED. §

The editing feature cannot handle as many entries as have now been entered. The last line cannot be successfully updated by the Editing Feature, and is therefore deleted. The program continues by demanding a checksum.

Note:- This message will not usually appear, as the buffer capacity will be exceeded before the Editing Feature save area overflows. (That would initiate a different error sequence).

§ TOO MANY NAMES - BOMB-OUT OCCURS ON. §

nnn nn

§ COMMENCING SHUT-DOWN. §

There are no slots available in the section of the staff names table into which nn nn must be placed and so a unique code cannot be assigned to the name.

The program terminates.

User response.

Re-arrange the staff name, so as to have a different 2 characters in the first position of the name,
e.g. SMITH E. change to E. SMITH or even possibly 'SMITH E.

Note:- Given the same division, rank, and first 2 letters of the name, the program can handle from 8 to 254 entries, depending on the order in which they are presented to the program.

§ TOO MANY PROJECTS. §

Too many entries, when specifying a list of division projects for the entry of time sheets.

The maximum number of division projects that the list can take is 14 with the present version of the program.

SAMPLE RUNS

We give 2 sample runs.

The first is a run assuming that the files have just been freshly initialised. It makes use of all the available documents. No defaults, or any other short-cuts are used.

The first few documents are the standard documents, followed by the entry of ranks, votes, vehicle numbers, staff names and contract numbers.

Thereafter each document in the system is used in order of document number.

The form of each document can thus be checked. The sequence of documents in this first run, could be used to check that the program is accepting all documents.

The second run checks and gives examples of the changes made for the second version of the IMPUT program. Table files are assumed to have been set up.

The run includes use of defaults, special symbols and the editing feature.

- Note:
- (i) The runs are given as they would take place on the terminal.
 - (ii) Items in brackets are comments, and are neither to be typed in by the user, nor are they typed out by the program.

RUN 1. Sample Run using all documents.

SNIPR ACCOUNTING INPUT SCHEME. DATE 01-01-70 TIME 01.01.01

WELCOME!\$

\$PLEASE GIVE PASSWORD DOCUMENT.\$

D50, password 2 (Give 2nd level Password)

\$THANK YOU - NOW PLEASE GIVE WEEK-MONTH DOC.\$

D52,1,1 = 54

\$THANK YOU - NOW WE CAN BEGIN.\$

\$DISC BUFFER POSITIONED.\$

\$ENTRY 1.\$ (Week-Month Document in)

\$ENTER DOCUMENT.\$

D41

\$ENTER ITEMS.\$

I100,1 (Salaries)

\$ENTRY 2.\$

I128,2 (Computer)

\$entry 3.\$

I130,40 (Vehicle transport)

\$ENTRY 4.\$

I146,60

\$ENTRY 5.\$

I159,80

\$ENTRY 6.\$

I\$

\$UPDATE COMPLETED.\$

\$ENTER DOCUMENT.\$

D40

\$ENTER ITEMS.\$

ICRO,24,3

\$ENTRY 7.\$

ISRO,32,2.5

\$ENTRY 8.\$

I\$

\$UPDATE COMPLETED.\$

\$ENTER DOCUMENT.\$

D42

\$ENTER ITEMS.\$

I 1,22.2

\$ENTRY 9.\$

I\$

\$/UPDATE COMPLETED.\$

\$/ENTER DOCUMENT.\$

D20

\$/ENTER ITEMS.\$

I,,,7001,CRO,GOUGH A.B.

(Create Staff member)

I,,,7001,SRO,WINE K.W.V.

I\$

\$/ENTRY 10.\$

\$/ENTRY 11.\$

\$/RANDOM UPDATE COMPLETED.\$

\$/ENTER DOCUMENT.\$

D30

\$/ENTER ITEMS.\$

I,,7001,1234, Morning Coffee

(Create Division Project)

I,,7001,1001, Work

I,,7031,4238, Computer Account

I\$

\$/ENTRY 12.\$

\$/ENTRY 13.\$

\$/ENTRY 14.\$

\$/RANDOM UPDATE COMPLETED.\$

\$/ENTER DOCUMENT.\$

D1,7001 = 7002

(Job cards times)

\$/ENTER ITEMS.\$

ICRO,GOUGH A.B., 7001, 1234,10,7001,1001,20.5

ISRO,WINE,K.W.V.,7001, 1001,30.5 = 24300

\$/ENTRY 17.\$

\$/OK.\$

I\$

\$/ENTER DOCUMENT.\$

D2, 15/9/69, 700010 = 850981

(Order form)

\$/ENTER ITEMS.\$

I 146, 7001,1001,25 = 8173

\$/ENTRY 18.\$

\$/OK.\$

I\$

\$/ENTER DOCUMENT.\$

D3,15/9/69, 1361,1181, 711884, = 865398 (Invoice)

ENTER ITEMS.

I 146, 7001/1234,9.55,10 = 8400.55

ENTRY 19.

OK.

I

ENTER DOCUMENT.

D4 = 4

(Payment instruction)

I 132, 700134, 146, 7001/1001, 15 = 708429

ENTRY 20.

OK.

I

ENTER DOCUMENT.

D5, 842 = 847

(Petty Cash)

ENTER ITEMS.

I 259, 159, 7001/1234,1.9 = 8654.9

ENTRY 21.

OK.

I

ENTER DOCUMENT.

D6, 200 = 206

(Computer charges)

ENTER ITEMS.

I 7001/1234, 379, 9.39 = 8623.39

ENTRY 22.

ENTRY 23.

(Program generated document 31)

OK.

I

ENTER DOCUMENT.

D7, 1 = 8

(Vehicle Mileages)

ENTER ITEMS.

I 16/9/69, 72,7001/1234 = 169276

ENTRY 24.

OK.

I

ENTER DOCUMENT.

D8,700013, = 700021 (Cancellation of Order)
~~ENTER ITEMS.~~
 I701983,146,7001/1001,17 = 710148
~~ENTRY 25.~~
~~OK.~~
~~I~~
~~ENTER DOCUMENT.~~
 D 9, 700008 = 700017 (Journal or Adjustment)
~~ENTER ITEMS.~~
 I, 146, 7001/1001, 16.41 = 8164.41
~~ENTRY 26.~~
~~OK.~~
~~I~~
~~ENTER DOCUMENT.~~
 D10, 700013, = 700023 (Committed item from list)
~~ENTER ITEMS.~~
 I 702180, 159, 7001/1001, 40 = 710381
~~ENTRY 27.~~
~~OK.~~
~~I~~
~~ENTER DOCUMENT.~~
 D 11, 715011 = 715022 (Immediate payment list)
~~ENTER ITEMS.~~
 1712904, 146, 7001, 1234, 7.18, 7.18, 101, 107,8 = 721515.36
~~ENTRY 28.~~
~~OK.~~
~~I~~
~~ENTER DOCUMENT.~~
 D12,705012 = 705024 (Monthly payment list)
~~ENTER ITEMS.~~
 1702115,159,7001/1001,45.33,45.33,4836,61055,455 = 776712.66
~~ENTRY 29.~~
~~OK.~~
~~I~~
~~ENTER DOCUMENT.~~
 D20 (Staff changes)
~~ENTER ITEMS.~~
 17001,CRO,GOUGH,A.B.,,, (Staff member left)
 17001,SRO,WINE, K.W.V.,7001,CRO,WINE,K.W.V. (Promoted to CRO)
~~I~~

§ENTRY 30.§

§ENTRY 31.§

§RANDOM UPDATE COMPLETED.§

§ENTER DOCUMENT.§

D21,7001 = 7022

(Add to budget times)

§ENTER ITEMS.§

I CRO,WINE K.W.V., 7001/1234,480 = 8715

§ENTRY 32.§

§OK.§

I§ .

§ENTER DOCUMENT.§

D22, 7001 = 7023

(Adjust accumulated times)

§ENTER ITEMS.§

I CRO,WINE K.W.V., 7001/1234,15.5 = 8250.5

§ENTRY 33.§

§OK.§

I§

§ENTER DOCUMENT.§

D23,7001 = 7024

(Insert budget time)

§ENTER ITEMS.§

I CRO,WINE K.W.V., 7001/1001,500 = 8502

§ENTRY 34.§

§OK.§

I§

§ENTER DOCUMENT.§

D24,7001 = 7025

(Add to accumulated times)

§ENTER ITEMS.§

I CRO,WINE K.W.V., 7001,1,22.5 = 7024.5

(Specify project by internal code)

§ENTRY 35.§

§OK.§

I§

§ENTER DOCUMENT.§

D25,7001 = 7026

(Insert budget time)

§ENTER ITEMS.§

I CRO,WINE K.W.V.,7001,1,440 = 7442

(Specify project by internal code)

§ENTRY 36.§

§OK.§

I§

§ENTER DOCUMENT.§

D26,7001,7001/1234,7001/1001 = 23264

(Job Cards times)

ENTER ITEMS.

ICRO,WINE K.W.V.,2,21.5 = 23.5 Specify project 7001/1001 by index 2
in above list

ENTRY 37.

OK.

I

ENTER DOCUMENT.

D30 (Project changes)

ENTER ITEMS.

I 7001,1234,, (Finish project)

I 7001,1001,7001,2002, More Work (Transfer to new code)

I

ENTRY 38.

ENTRY 39.

RANDOM UPDATE COMPLETED.

ENTER DOCUMENT.

D31 = 31 (Add to budget)

ENTER ITEMS.

17031/4238,2,20000 = 31271

ENTRY 40.

OK.

I

ENTER DOCUMENT.

D32 = 32 (Adjust Accumulated Expenditure)

ENTER ITEMS.

I 7001/2002,60,10.66 = 9073.66

ENTRY 41.

OK.

I

ENTER DOCUMENT.

D33 = 33 (Insert in budget)

ENTER ITEMS.

I 7001/2002,80,1000 = 10083

ENTRY 42.

OK.

I

ENTER DOCUMENT.

D34 = 34 (Adjust Accumulated Expenditure)
~~ENTER ITEMS.~~
 I 7001,1,60,1.1 = 7063.1
~~ENTRY 43.~~
~~OK.~~
~~I~~
~~ENTER DOCUMENT.~~
 D35 = 35 (Insert in budget)
~~ENTER ITEMS.~~
 I 7001,2,60,750 = 7813
~~ENTRY 44.~~
~~OK.~~
~~I~~
~~ENTER DOCUMENT.~~
 D36 = 36 (Adjust commitments)
~~ENTER ITEMS.~~
 I 7001,1,60, - 780 = 6282
~~ENTRY 45.~~
~~OK.~~
~~I~~
~~ENTER DOCUMENT.~~
 D40 (Amend Ranks)
~~ENTER ITEMS.~~
 ISRO, ,
~~RANK IS IN TABLE -CODE WILL BE CHANGED - WARNING.~~
~~RANK WILL BE DELETED.~~
~~ENTRY 46.~~
 I ARO,56,1.75
~~ENTRY 47.~~
~~I~~
~~UPDATE COMPLETED.~~
~~ENTER DOCUMENT.~~
 D41 (Amend Votes)
~~ENTER ITEMS.~~
 I 159, (Delete this vote)

\$ENTRY 48.\$
 I 161,80
 \$ENTRY 49.\$
 I\$
 \$UPDATE COMPLETED.\$
 \$ENTER DOCUMENT.\$
 D42 (Amend Vehicles)
 \$ENTER ITEMS.\$
 I2,10.5
 \$ENTRY 50.\$
 I\$
 \$UPDATE COMPLETED.\$
 \$ENTER DOCUMENT.\$
 D51 (Change Passwords)
 \$ENTER ITEMS.\$
 I new password 1, second new password
 \$UPDATE COMPLETED.\$
 \$ENTER DOCUMENT.\$
 D 52,36,9 = 97 (Week-Month)
 \$ENTER DOCUMENT.\$
 D42 (Put in another document)
 \$ENTER ITEMS.\$
 I3,5.2
 \$ENTRY 2.\$ (Entry 1 was the Week-Month document above)
 I\$
 \$UPDATE COMPLETED.\$
 \$ENTER DOCUMENT.\$
 D53, (Close all files. Suppress indicative dump
 when well is re-opened)
 \$ALL FILES CLOSED.\$
 \$ENTER DOCUMENT.\$
 D54 (Message to operator)
 \$ENTER ITEMS.\$
 I HULLO COMPUTER OPERATOR!
 \$MESSAGE GIVEN TO OPERATOR.\$
 \$ENTER DOCUMENT.\$
 D*
 \$NIPR ACCOUNTING INPUT SCHEME. DATE 01-01-70 TIME 01,30.01 GOOD-BYE!\$

(END OF RUN 1)

RUN 2 Sample Run including New Features of Version 2.

SNIPR ACCOUNTING INPUT SCHEME. DATE 09-05-70 TIME 08.07.10 WELCOME!\$
 \$PLEASE GIVE PASSWORD DOCUMENT.\$
 D50, wrong password
 \$THINK CAREFULLY AND TRY AGAIN.\$
 R50, password 1 (correct first level password)
 \$THANK YOU - NOW PLEASE GIVE WEEK-MONTH DOC.\$
 D 52,2,1 = 55
 \$THANK YOU - NOW WE CAN BEGIN.\$
 \$DISC BUFFER POSITIONED.\$
 \$ENTRY 1.\$
 \$ENTER DOCUMENT.\$
 D4 = 4 (New formatted document)
 \$ENTER ITEMS.\$
 I 1111,2222,157,7031/4225,10 = 14756
 \$ENTRY 2.\$
 \$OK.\$
 I 1111,2222,,/,20 = 14766 (Use defaults)
 \$ENTRY 3.\$
 \$OK.\$
 I\$
 \$ENTER DOCUMENT.\$
 D5,22 = 27 (New formatted document)
 \$ENTER ITEMS.\$
 I 1111,159,/4015,10 = 12326 (Use default division 7031)
 \$ENTRY 4.\$
 \$OK.\$
 I\$
 \$ENTER DOCUMENT.\$
 D6,27 = 33 (New formatted document)
 \$ENTER ITEMS.\$
 I 17031/,135,50 = 11231 (Default project 4015)
 \$ENTRY 5.\$
 \$ENTRY 6.\$
 \$OK.\$
 I\$
 \$ENTER DOCUMENT.\$

D2,1/1/69,1 = 10172

ENTER ITEMS.

I

ENTER DOCUMENT.

D11,1169 = 1180

ENTER ITEMS.

I 1111,155,7031/4225,10,10,273,1003,10 = 13828

ENTRY 7.

OK.

12222,,/,20,25,,,22=14976

(All defaults used)

ENTRY 8.

OK.

I

ENTER DOCUMENT.

D53, (Comma after 53: Suppress indicative dump)

ALL FILES CLOSED.

ENTER DOCUMENT.

D34 = 34

(Special form of Doc 32)

ENTER ITEMS.

I/2,111,10=7154

(Default division 7031)

DISC BUFFER POSITIONED.

(Note: No indicative dump)

ENTRY 2.

(Entry 1 was regenerated
Week-Month Doc.)

OK.

I

ENTER DOCUMENT.

D35 = 35

(Special; insert budgets)

ENTER ITEMS.

I/2,111,10 = 7154

ENTRY 3.

OK.

I

ENTER DOCUMENT.

D36 = 36

(Special; adjustment commitments)

ENTER ITEMS.

I/2,111,10 = 7154

ENTRY 4.

OK.

I

ENTER DOCUMENT.

D52,2,0 = 54 (Test Month of Zero)

~~ENTER DOCUMENT.~~

D31 = 31

~~ENTER ITEMS.~~

I7031/4225,20,10

I = 11286 (Checksum by itself)

~~ENTRY 2.~~ (Entry 1 was new Week-Month document)

~~OK.~~

~~I~~

~~ENTER DOCUMENT.~~

D1,7031

~~ENTER ITEMS.~~

ISCOR, hall r.s.,1,10=1 (Bad checksum)

~~BAD CHECKSUM ==> THIS CHECKSUM IGNORED - FIX IT UP.~~

YOURS 1.00 MINE 18,298.00

(Complete document is rejected).

~~ENTER DOCUMENT.~~

D31 = 31

~~ENTER ITEMS.~~

I/,20,10

I"

(Test this editing symbol)

~~SUBTRACT LAST KEPT AMOUNT~~ 11,286.00

R = 1

~~BAD CHECKSUM ==> THIS CHECKSUM IGNORED - FIX IT UP.~~

YOURS 1.00 MINE 0.00

~~CHANGE WHICH LINE?~~ (Editing feature)

~~LO~~

(Return to standard mode)

~~1%~~

(Get rid of document)

~~ENTER DOCUMENT.~~

D26,7031,7031/4015,/4120,/4121,/4122=51559 (New time sheets)

~~ENTER ITEMS.~~

I scro, hall r.s.,1,10,3,20 = 34

~~ENTRY 4.~~

~~OK.~~

I aro, muller m.w.,1,10,3,20,4,30 = 68

~~ENTRY 7.~~

~~OK.~~

~~I~~



ENTER DOCUMENT.

D9, 1111 = 1120

(New formatted document)

ENTER ITEMS.

I 2222,111,7031/4120,10 = 13494

ENTRY 8.

OK.

I 3333,,/,10 = 14605

(Use all defaults)

ENTRY 9.

OK.

I

ENTER DOCUMENT.

D31 = 31

ENTER ITEMS.

I 7031/9898,20,10 = 16959

(Check action for bad project)

BAD PROJECT 7031/ 9898. ONLY USED FOR CHECKSUM.

OK.

I

ENTER DOCUMENT.

(Showing the editing feature)

D32 = 32

ENTER ITEMS.

I 7031,4015,2,11 = 11058

(Type 11 instead of 10 for amount)

BAD CHECKSUM ==> THIS CHECKSUM IGNORED - FIX IT UP.

YOURS 11,058.00 MINE 11,059.00

CHANGE WHICH LINE?

L1

(Change first (only) line).

E 7031,4015,2,10

(Correctly)

L

(Plain Carriage Return)

I = 11058

(Checksum is now correct)

ENTRY 10.

OK.

I

ENTER DOCUMENT.

D 32 = 32

ENTER ITEMS.

I/,2,10 = 1158

(Checksum should have been 11058)

BAD CHECKSUM ==> THIS CHECKSUM IGNORED - FIX IT UP.

YOURS 1,158.00 MINE 11,058.00

CHANGE WHICH LINE?

L

(Plain Carriage Return)

I = 11058 (Correct checksum)
 \$ENTRY 11.\$
 \$OK.\$
 I\$
 \$ENTER DOCUMENT.\$
 D 32 = 32
 \$ENTER ITEMS.\$
 I/,2,10 (Type 10 instead of 11 for amount)
 I/,20,10
 I/,40,10 = 33232 (Type 10 instead of 11 for amount)
 \$BAD CHECKSUM ==> THIS CHECKSUM IGNORED - FIX IT UP.\$
 YOURS 33,232.00 MINE 33,230.00\$
 \$CHANGE WHICH LINE?.\$
 L1
 E/,2,11 (Correctly)
 L3
 E/,40 (Error here)
 \$INCORRECT NO, OF ENTRIES.\$
 R/,40,11 (Correctly)
 L
 I = 33232 (Which is now correct)
 \$ENTRY 14.\$
 \$OK.\$
 I\$
 \$ENTER DOCUMENT.\$
 D9,1112 = 1121
 \$ENTER ITEMS.\$
 I,111,7031/4120,10 = 11272 (Zero order number for adjustments)
 \$ENTRY 15.\$
 \$OK.\$
 I 7011002,,/,10 = 7022274 (Order with extension number)
 \$ENTRY 16.\$
 \$OK.\$
 I 70110012,,/,10 = 70121284 (Using 2 digit extension number)
 \$ENTRY 17.\$
 \$OK.\$
 I\$
 \$ENTER DOCUMENT.\$

D54 (Message to operator)

§ENTER ITEMS.§

I (No message)

§BAD LENGTH OF MESSAGE.§

§ENTER DOCUMENT.§

D54 (Message to operator)

I End test. Ignore this message

§MESSAGE GIVEN TO OPERATOR.§

§ENTER DOCUMENT.§

D*

§NIPR ACCOUNTING INPUT SCHEME. DATE 09-05-70 TIME 08.20.14

GOOD-BYE!§

(END OF RUN 2)

Glossary

A glossary of internal names used in the IMPUT program has been prepared on library index cards. These are known as "The White Cards". They are comprehensive in cross-referencing and content.

Short glossaries are available for some of the other programs.

PART II

Amendments to "An Accounting Program for the NIPR".
Special Report No. 98.

Pgs. 14-21 Superceded by Part I of this supplement.

Pg. 25 In the paragraph Sub-block Label Record:
Change 1st word "Data" to "Date"
Change 1st word of second line "additional" to "additions".
At the end of the paragraph (3rd line) delete "files" and add:
"and Suppliers Records file."
(Document Code 254, Length 55 bytes)".

Under Record Structure (b)

Change field 12 - 15 to:
"12 - 15 Date (2) or serial number (8,10) of document"

Pg. 27 (f) Field 16 - 20 change "Cost" to "Amount"
(g) Field 9 - 11 change "Unused" to "Job number"
" 12 - 15 change "Date (.....' to "Serial number
Account number)"
" 16 - 20 change "Cost" to "Amount"

Pg. 28 (k) Add "and Acc. Expd. file" to the underlined title
(l) Add "and Acc. Expd. file" after the words "Job Cards
Times file" in the underlined title.
(m) Add "only" to the end of the underlined title.

Pg. 30 Change 2nd line of Organisation to:-
"(records 12 records per block, blocksize 216)"
Change paragraph Length to:-
"1500 records in 15 tracks
i.e. 2 cylinders + 1 cyl. for overflow = 3 cylinders"
Add the following note to the bottom of the page:-
(Note: Under the present blocking, 132 records fit on a track.
Remember that at least 1 track per cylinder is used for the
cylinder index.)

Pg. 31 Change 2nd line of Organisation to:-
 "records 171 records per block, blocksize 3591.
 Fields 19 - 20 and 21 should be braced together and
 labelled KEY thus:

```

      ( 19 - 20
KEY   (
      (    21
  
```

Pg. 32 Change 2nd line of Organisation to:-
 "records 34 records per block, blocksize 1700".
 The Record Structure should read as follows:

```

"bytes  1 - 4   Date of Order
        5 - 7   Supplier's number
        8 - 11  Order number
KEY     { 12 - 13 Order number extension
        { 14 - 15 Vote
        { 16 - 17 Divn. and Project Code
        { 18 - 21 Serial number of Commitment
        { 22 - 25 Estimated cost (Amount committed)
        { 26 - 29 Date of invoice
        { 30 - 33 Number of invoice
        { 34 - 37 Serial number of payment list
        { 38 - 40 Serial number of cheque
        { 41 - 45 Amount Paid
        { 46 - 49 Serial number of cancellation
        { 50    Updated from cards."
  
```

Pg. 34 A After underlined heading add:
 "Blocked fixed length. (17 records per block)"
 A (a) Field 1 - 5 change "Dummy" to "Rank"

Pg. 38 (2) Under Both Stages. Add "Job Card Times" after "Journal
 Entries"

Pg. 41 Paragraph Special characters used by Program.
 Superseded by Part I of this Supplement.

Pg. B1 After title "Vote Codes and" add
 "100 Salaries (Account code 1)
 Computer Costs (Account code 2)

Pg. B1, B2, B3. Each group of votes has a specific account code.

Votes (110 - 129)	have	Account	Code	20
" (130 - 139)	"	"	"	40
" (140 - 149)	"	"	"	60
" (150 - 184)	"	"	"	80
" (185 - 189)	"	"	"	100
" (190 - 199)	"	"	"	120
" (304 - 393)	"	"	"	140
" (400 - 499)	"	"	"	180
" (600 - 660)	"	"	"	160
" (670 - 699)	"	"	"	200

Pg. B2 After Internal income 190/199 i.e. at the bottom of the page)
 the following should be added:

"200
 201
 211
 216/8
 230
 242/7
 261 "

Pg. B3 In "Current Capital Expenditure" the word "Current" should
 be deleted.

In "Running Income" the word "Running" should be changed to
 "External".

Under "Financial Ledger Codes" (i.e. at the bottom of the page
 add:-

"820 Central-Salaries
 821 " -Non CSIR Equip.
 822 " -S & S
 823 " -S & T
 824 " -Int. Sc. Services
 825 " -General Expenses
 827 " -CSIR Equip.
 829 Deposits "

Pg. C1 Superceded by Part I of this Supplement.

Pg. D1 Change the first "DIR" to "DIR."
Replace codes 112 to 168 by:

"GRP4	110
GRP5	118
GRP6	126
GRP7	134
GRP8	158
GRP9	166"

Pg. F1 Superceded by Table in Special Report No. 107
(Operating Manual for the Accounting Program (version 1969)
of the N.I.P.R.)

Pg. G1 Replace by: Appendix G.

List of standard files, their space and Backups

	<u>Approx disk space*</u>	<u>No. of Backup copies**</u>
1. Input program Output Well	6 tracks	-
2. Tables	21 "	13
3. Monthly Expenditure file	12 "	13
4. Accumulated Job Cards Times file	20 "	13
5. Accumulated Expenditure File	20 "	13
6. Suppliers' Records File	20 "	12

* A track refers to a 3625 byte, 2311 disk drive track.

** No. of copies over a financial year (12 months).

An extra copy of initial budget figures is also kept.

PART III

Amendments to "operating Manual for the Accounting Program
(Version 1968) of the N.I.P.R. 8
(Special Report No. 107).

- Pg. 2 Under Subroutines
Change "GVKSUBI" to "GVKSUBI"
Change "TRMNL20" to "TRMLIO"
- Pg. 6 No. 10
Change "NACC1DP" to "NACC1OP"
- Pg. 8 Just before the Note
Change "MXN" to "m x n"
Note (iv) should start: "(iv) *is an unblocked....."
- Pg. 9 The word "Reorganising" heading the 3rd column in the table,
should be followed by a question mark "?".
- Pg. 16. Change "8 - 80 Ignored" to
"8 = P Print entry and Document Number
 message (≠ P Do not print)
9 - 80 Ignored"
- Pg. 17 Insert at the bottom of the page (At end of description
ENTRY nnnn...)
"(This is printed only if 'P' appears in Col. 8 of
the parameter card)"
- Pg. 24 Change "8 - 80 Ignored...." to
"8 = P Print diagnostic Messages (≠ P Do not print)
9 = D Dump on file error
10 = U Treat "unreachable block" as "not found record"
11 - 80 Ignored.
Notes: D & U are required because of the software fault being
fixed by T.N. Furton (IBM).

Pg. 25 The message ~~\$\$FINISHED\$\$~~ should be called
~~\$\$COMPLETELY FINISHED\$\$~~ and moved to the top of the list
of correct messages (to preserve alphabetical order).

Cont. The following should be inserted at the beginning
~~\$\$ALMOST FINISHED\$\$~~
The program has almost finished. The program continues with
the final stage of transferring names and amounts of time.
Next message should be
~~\$\$COMPLETELY FINISHED\$\$~~ (q.v.)

Pg. 26 Insert the following error messages.

```
"DECBEXCI IS      nnnnnnnn
  WHATS UP
  I AM GIVING UP.
  BOMB-OUT  dddd.
```

There has been an error in processing the file ACTIM.
The error occurred on the day and time given by dddd..

Cause: The cause is reflected in the exception code
nnnnnnnn.

The exception code is taken from the DECBEXC1
field in the Data Event Control Block
See IBM S/360 OS System Control Blocks
from C28-6628

Action to be taken depends on the error."

If the error is 'Duplicate Record' re-run the job until it works.
This error is a hazard of the special fix-up. See correspondence
(complaints of errors).

```
"RESET ERROR-WHEREAS THE CONTROL REC.
  UGH - BOMB.
```

An error occurred on the file ACTIM.

This error should not occur and its appearance would indicate
some other error, e.g. Incorrect program modification."

Also Add the following at the end of the section on Error
Messages. "Certain errors provide a user completion code
before the program terminates."

The code numbers have the following meanings:

898 This occurs as a result of the message "RESET ERROR....."(q.v.)

899 This occurs as a result of the message
"DECBEXCL IS" (q.v.)

999 This comes from Subroutine ERRTNE (q.v.).

Pg. 50 In column (11) Add "SERIAL" after "DATE".

Pgs. 61 - 90

From "General" on Pg. 61, till "2. Messages....." on Pg. 90,
is superseded by the information given in Part I of this
supplement.

Pg. 112 Add "(1)" above "dddd" on top line
Add "(2)" above "xx....xx" on top line
Add "(8)" to the right of "BALANCE" on 2nd line
Add "(9)" to left of "PROJECT" on 4th and 12th lines
Add "(12)" above "****" at end of 3rd line
change "(21)" to "(12)" on 6th last line.
Add "(21)" to left of last line "THE C/F..."

Pg. 114 Add "(8)" to left of "The Accumulated net balance (11th last line)
Add "(9)" to left of "Division and..." (7th last line)
Add "(10)" to left of "An alpha-numeric..." (5th last line)
Add "(11)" to left of "A line showing..." (4th last line)

Pg. 115 Add "(12)" to left of "Warning asterisks" (2nd line)

Pg. 120 Change "(13)" to "(12)"
Change "(14)" to "(13)"
Change "(15)" to "(14)"
Change "(16)" to "(15)"
Change "(17)" to "(16)"
Delete "(18)"
Change "(19)" to "(17)"
Change "(20)" to "(18)"

Pg. 121 Label the complete picture "(19)"
 Add "(20)" above "nnn" in the 1st line
 Change "(23)" to "(21)"

Pg. 122 No. 10
 Change "of" to "or" in "staff member of STAFF..."

Pg. 136 b Document Selection Card.
 2 - 4
 Change "0006" to "006"

Pg. 142 II. Output
 2.
 Change "ESELECT" to " SELECT"
 and in Last paragraph on the page (-and in its heading)
 Change "ESELECT" to " SELECT"

Pg. 143 Field 15
 Add "or Job number" after "cheque number"

Pg. 167.1 Insert the following Subroutine after page 167.

Subroutine ERRTNE

A. Purpose

An Assembler language subroutine to return the Exception codes
 in expanded form for a given file DCB.

B. Entry name is ERRTNE.

C. Usage

CALL 'ERRTNE' USING FILE-NAME,
 DECBEXC1.

Where

SELECT FILE-NAME....

and

DECBEXC1 PICTURE X(8)

(i) Input to the Subroutine

FILE-NAME is the name of the file.

by COBOL convention, the address of the DCB is passed.

(ii) Output from the subroutine.

DECBEXC1 is the exception code taken from the DECBEXC1 field in the Data Event Control Block, Each bit in this field is expanded to an EBCDIC 0 or 1 depending on whether the corresponding bit was off or on.

For a description of the meaning of the various fields See IBM S/360 OS System control Blocks, Form C28-6628.

- D. Routines Called: None
- E. Note: The main use of the subroutine is as a substitute for the INVALID KEY option.

The subroutine terminates with an ABEND user code of 999 when it is unable to find the DECB (and hence the DECB exception code field).

Pg. 175 Interchange Remedy for 4 for Remedy for 5 and v.v.

Pg. 179 Remedy for 5 should read:-
"Transfer the person using document 20 (transfer persons)".



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