**Billing Software Rules**

1. **Importing the Billing.txt File**

As the application uploads the Billing.txt file, it must review each transaction line within the file prior to populating the Pending, New Patron and Problem Queues following a set of defined rules.

Example of a billing transaction line:

223960|051212|ak |p11809115|uA06319740|Smith, Bob|0175L|-|n|198|4| b31822011858412|Mouse Tales|ND1950.S4 P37|OVERDUEX|-5000|-2000|0

Description of a billing transaction line:

INVOICE#|DATE YYMMDD|LOC|PATRON RECORD #|PID|NAME|ADDRESS| PCODE1| PCODE2|PATRON AFFILIATION|PATRON TYPE|ITEM BARCODE #|TITLE|CALL#| CHARGE TYPE| AMOUNT 1|AMOUNT 2|AMOUNT 3

**Rule #1 – Identifying Internal Transactions**

If the transaction line lists any of the following PATRON TYPES, then ignore it and do not import it into the system: 0,12,13,14,15,18,20,21,36.

**Rule #2 – Populating the Queues**

Rule Priority: The system should enforce each rule in the following order:

* **Rule 2.1**: If a duplicate transaction is found, then place it in the Problem Queue.
* **Rule 2.2**:If the first character of the LOC code is not defined in the software, then place the transaction into the Problem Queue.
* **Rule 2.3**: If the PATRON TYPE is not defined in the software, then place the transaction into the Problem Queue.

* **Rule 2.4**: If the CHARGE TYPE is not defined in the software, then place the transaction into the Problem Queue.
* **Rule 2.5**: If no PID is specified (marked by an underscore character instead of an A-number), then place it into the New Patrons Queue.
* **Rule 2.6**: If the specified patron type is 2, 3, or 22 AND the affiliation code is 63, 68-74, 76-134, 139, 151, 167, 177-178, 187, or 192-195, then place the transaction into the Pending Queue.
* **Rule 2.7**: If, after completing the above rules, the patron’s patron record number AND PID together are identified as not being in the internal history database, then place the transaction into the New Patron Queue.
* **Rule 2.8**: If, after completing the above rules, the patron’s patron record number OR PID only singularly match existing data in the internal history (i.e. either the patron record number or the PID match, but no both), then place the transaction into the Problem Queue.

1. **Outputting the Billing Files to Campus (ISIS)**

Transaction information sent to the campus billing systems must include specific information, created following these rules:

Example of an output line:

ACTION CODE PID DETAIL CODE AMOUNT INVOICE#

AA08582849 LIBEFZ0000000250{ 264162 LIBRARY ITEM 31822029143476

STANDARD TEXT ITEM BARCODE +/- SPECIFIER

See the document “**T2 Interfaces – Student Charges (ISIS)”** (updated 4/14/07) for details on output line format.

**Rule #1 – Charge Types in Billing.txt File**

Five different CHARGE TYPEs are defined in the circulation system: LOST, MANUAL, OVERDUE, OVERDUEX, & REPLACEMENT.

Per UC policy, $7.00 of every LOST or REPLACEMENT transaction must be marked for collection by the UC Regents. Thus, if a transaction has a CHARGE TYPE of either LOST or REPLACEMENT, then the billing software must convert that single transaction into two, one marked in the detail code with an F (UC Regents) and another with an R (Library Replacement Fund). See **Rule 2.3** below for specifics.

**Rule #2 – Detail Codes**

Each transaction sent to campus must include a 6-character detail code (see above), structured as follows:

* **Rule 2.1**: The first 3 characters are always LIB.
* **Rule 2.2**: The 4th character is defined by the first character of the LOC code in the Billing.txt transaction line:

|  |  |
| --- | --- |
| If the 1st character of the LOC code is… | …then the 4th character of the detail code is… |
| 8 | L |
| 9 | L |
| a | C |
| b | B |
| c | C |
| e | E |
| f | C |
| g | G |
| i | R |
| l | L |
| m | M |
| s | I |
| Other | L |

* **Rule 2.3**: The 5th character is defined by the CHARGE TYPE in the Billing.txt transaction line:

|  |  |
| --- | --- |
| If the CHARGE TYPE is… | …then the 5th character of the detail code is… |
| LOST | See Below\* |
| MANUAL | R |
| OVERDUE | F |
| OVERDUEX | R |
| REPLACEMENT | See Below\* |

* + **Rule 2.3.1**: The final three segments of the transaction line imported from the ILS into the billing software detail the amount of the charge. If the CHARGE TYPE is LOST or REPLACEMENT, then the billing software should add the three AMOUNT values together, then following the explanation under **Rule #1** above, it should create the following two transaction lines in the output file:
    - 1. A transaction line in the amount of $7.00 with the 5th character of the detail code being F.
      2. A transaction line with the remaining total amount of the charge with the 5th character of the detail code being R.
* **Rule 2.4**: The 6th character is defined by the PATRON TYPE in the Billing.txt transaction line:

|  |  |
| --- | --- |
| If the PATRON TYPE is… | …then the 6th character of the detail code is… |
| 1 | X |
| 2 | G |
| 3 | Z |
| 4 | O |
| 5 | O |
| 6 | O |
| 7 | O |
| 8 | O |
| 9 | O |
| 11 | O |
| 16 | S |
| 17 | S |
| 19 | O |
| 22 | Z |
| 23 | X |
| 24 | X |
| 25 | X |
| 26 | X |
| 27 | X |
| 28 | G |
| 29 | G |
| 30 | G |
| 31 | G |
| 32 | X |
| 33 | X |
| 34 | X |
| 37 | X |
| 38 | X |
| 39 | X |
| 40 | X |
| 41 | X |
| 42 | G |
| 43 | O |
| 44 | X |

**Rule #3 – Amounts & Positive or Negative Charge Identifier**

As mentioned previously, the final three segments of the transaction line imported from the ILS into the billing software detail the amount of the charge or, in the case of negative amounts, the credit, for example:

REPLACEMENT|5000|2000|1400

OVERDUE|700|0|0

MANUAL|2000|0|0

Negative transactions (or credits) are clearly marked in the amount sections by a – character and will only be listed with transactions with a CHARGE TYPE of OVERDUEX, for example:

OVERDUEX|-11000|-2000|0

As mentioned in **Rule #2.3.1**, if the CHARGE TYPE is LOST or REPLACEMENT, then the billing software should add the three AMOUNT values together, and then following the explanation under **Rule #1** above, it should create the following two transaction lines in the output file:

1. A transaction line in the amount of $7.00 with the 5th character of the detail code being F.
2. A transaction line with the remaining total amount of the charge with the 5th character of the detail code being R.

Historically, the Library never assessed any fines or replacement bills that were not whole numbers. Thus, the current billing software was programmed to only utilize the { and } characters to designate the final digit of the amount as a 0 and positive or negative as a whole. However, recently some of the branches began inserting specific values (to the cents) in some item record PRICE fields. The impact of this is that if one of these items were to be checked out and charged a REPLACEMENT bill, then the amount being outputted by the ILS would not end in a 0, which means that the billing software would send the wrong value (truly by only a few cents) to the campus billing system.

In light of this fact, with this newest version of the billing software, we would like to integrate the complete currency format rules for the final digit of the amount as detailed in the the document “**Currency Formats for UCSD Upload Files,”** written by Peter Delmonte (Updated 12/18/07).