Topic: **Double Ending Noise Words**

Question By: **Tom Wrosch**

Jurisdiction: **Oregon**

Date: **2011 September 29**

Jurisdiction	Questions
	What does the model search logic say we're supposed to do with "double" ending noise words or even embedded noise words? Is it just the word(s) that come at the end, or is it a reiterative process? If it is a reiterative process, does it look for all instances of the noise word in the name?
Alabama	
Alaska	
Arizona	
Arkansas	
California	
Colorado	
Connecticut	
Delaware	
District of Columbia	
Florida	
Georgia	
Hawaii	
Idaho	
Illinois	
Indiana	
Iowa	
Kansas	
Kentucky	
Louisiana	
Maine	
Maryland	
Massachusetts	
Michigan	
Minnesota	
Mississippi	

Missouri	
Montana	
Nebraska	
Nevada	
New Hampshire	
New Jersey	
New Mexico	
New York	
North Carolina	
North Dakota	
Ohio	
Oklahoma	
Oregon	
Pennsylvania	
Rhode Island	
South Carolina	
South Dakota	
Tennessee	
Texas	This answer will depend on what jurisdiction you talk to as far as what is being done, but here is what we do in Texas, and if I might add, I think this is the proposed method of dealing with noise words (of course Robert will chime in and start chanting “No Noise Words”)J Once we are down to the step of removing noise words in the name normalization process we begin stripping noise words in a reiterative process (starting with the longest noise word string to the shortest). So in your example… Acme LLC, Limited Liability Company We would strip the ending “Limited Liability Company” on our first pass through the noise word list. The first pass ends when we find something. (Note the importance of longest noise word string order. If you were to find the word “Company” first. You would not find anything else after that) On the second pass against the name we would find “LLC” at the end of the name, remove it and thus complete the second pass. On the third pass, nothing would be found and the normalized name would end up being “Acme”. Noise words are removed ONLY from the end of the name.
Utah	

Vermont	
Virginia	
Washington	
West Virginia	
Wisconsin	
Wyoming	

Additional Comments:

Fri 09/30/2011 10:45 AM

Tom, here is paper on the subject from 2002 that may be helpful. (Text of Paper follows.)

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MARS 503 Search Logic: Developing the Edit Procedure
May 6, 2002
By Wally Boggus, Capitol Services, Inc.

The International Association of Corporation Administrators (IACA) has promulgated comprehensive rules, procedures, and policies designed to assist filing officers administer the filing system mandated by the Uniform Commercial Code. Covering a broad range of filing office operational issues from office hours to search logic, the Model Administrative Rules (MARS) has been adopted by a majority of filing officers across the country. While the action of filing officers to implement MARS is fairly intuitive in most cases, the implementation of the provisions related to search logic is not so clear-cut. This paper attempts to demystify the computer technology necessary to implement the rules and assist filing officers in their charge to produce search results that achieve the search effect implied by MARS 503. This paper does not attempt to reveal the solution that meets the requirements of 503 as there are a number of possible solutions that may be just as effective (or more effective) in producing the search result intended by 503. This paper is intended to assist filing officers and their IT professionals regarding the requirements of 503 and to serve as a point of departure for considering possible computer programming ideas and techniques to get the job done.

Past data entry procedures (e.g., moving “the” at the beginning of an organization name to the end of the name) that would not produce the desired search effect under MARS 503, may require some remedial filing office action including the regeneration of search keys for affected filing records. Specific filing office action will depend on the circumstances and information contained within the filing system. Each filing office will most likely have some legacy issues to contend with. This paper does not attempt to catalog legacy issues nor provide solutions for the many legacy issues that filing officers may face.

To achieve the MARS 503 search effect, filing officers that operate computer-based filing systems must develop and implement an edit procedure that operates both on the debtor names of financing statements recorded during the filing process as well as debtor names given during the search process (503.8). This means that the edit procedure should be deployed in a dual fashion within the computer-based UCC recording and retrieval system to: (1) normalize debtor names to create search keys to be associated with each financing statement record; and, (2) to identically normalize debtor names given within a search process. Database search keys serve the search function in the discovery of financing statements that match a given normalized search criteria. Both the normalized search keys and search criteria operate behind the scenes within the filing system of the filing office. The debtor name displayed or reported to a searcher should be the name exactly as presented on the financing statement and entered into the filing system; not the search key.

MARS 503 currently contains 9 unique rules that describe the desired standard result or search effect. To that end, some of the rules imply specific edit routines of the overall edit procedure designed to accomplish the overall search result specified by MARS 503.

MARS 503.1 - There is no limit to the number of matches that may be returned to the search criteria.

503.1 does not require an edit routine.

MARS 503.2 - No distinction is made between upper and lower case letters.

503.2 requires an edit routine to convert all alphabetic characters of the debtor name to either upper or lower case where the case-sensitive database technology is used. Most filing offices convert all alphabetic characters to upper case.

MARS 503.3 - Punctuation marks and accents are disregarded.

503.3 requires an edit routine to remove punctuation marks and accent characters from the debtor name. While there may be some debate about what characters constitute punctuation and accents, a good argument can be made to remove all non-alphanumeric characters with the exception of the ampersand (“&”) . Because the ampersand character is a common abbreviation for “and”, and it has received special treatment in past filing systems, the ampersand requires special processing with consideration of historical data entry and search procedures. If for instance, the data entry policy in the past was to substitute “and” for “&” or vice versa, then the edit routine should be devised to continue whatever the prior practice was. If no substitution was made and indexing in the past was both, “A & B Company” and “A and B Company” a search under the name “A & B Company” may not report “A and B Company”, or vise versa. It is possible that the search routine could be enhanced to perform multiple searches given search criteria that includes an “&” or an “and”, but this alternative will cause other logical challenges given a name that includes mixed usages such as the name “A & B and Associates, Inc.” Therefore, to eliminate the need to perform multiple searches and reduce the complexity of the edit routine, regeneration of search keys for target names should be considered.

MARS 503.4 - Words and abbreviations at the end of a name that indicate the existence or nature of an organization as set forth in the "Ending Noise Words" list as promulgated and adopted by the International Association of Corporation Administrators as from time to time, are disregarded (e.g., company, limited, incorporated, corporation, limited partnership, limited liability company or abbreviations of the foregoing).

MARS 503.4 requires the filing office to negate the search effect of typical business endings that appear at the end of organization names such as Inc., Company, and Co. IACA has developed a list of such business endings entitled, "IACA List of Ending Noise Words."

The basic idea of the noise word edit routine is to start at the right end of the organization name and remove any words that match one or more entries in the noise word list. While the basic concept seems simple, the computer programming and logical mechanics necessary to obtain the desired search effect offer a challenging application of computer language string functions.

For example, how should the edit routine eliminate the business ending contained in the name ABC, Professional Limited Liability Company? The phrase, "Professional Limited Liability Company" is a business ending contained in the IACA list, but so is "Company". If the single word "Company" was removed without first searching for a larger matching phrase, the logic would fail to achieve the desired result. If the first iteration of the logic removed "Company", the second iteration would fail to discover an entry in the list that matches the remaining right end of the name (i.e., "Professional Limited Liability"). As a result, "Professional Limited Liability" would not be removed from the name because that specific phrase is not contained in the noise word list. So, the order of comparison is important. The entries in the list must be compared in descending order of their string length or word count.

A good case can be made for the elimination of spacing prior to processing the noise word edit routine because spacing must be eliminated from the name anyway at some point pursuant to MARS 503.6. If spacing is eliminated prior to processing this routine, spacing contained within the entries of the noise word table must also be eliminated. The benefit of this approach is that it offers a consistent response to issues that arise due to the variability of spacing in other parts of the name whereby the presence of spaces or the lack thereof, is rendered insignificant. If spacing is not eliminated before performing the noise word edit routine then the noise word table should include variations for entries, such as "LLC" and "L L C". Variations for entries in the table would be needed where there is some likelihood that spacing presented within the debtor name of a financing statement could vary.

Another objective of the noise word edit process is to remove all contiguous matching words or phrases in the IACA list from the end of the name until there are no more words that match. This requirement entails an iterative or looping operation that continues until no entries in the list match the rightmost word or phrase remaining in the name. For example, the name, "Investment Partners Company, Inc", contains 3 contiguous words at the end of the name that match 3 separate entries in the IACA noise word list. On the first pass or iteration of the noise words edit routine; "Inc" would be removed. On the second pass; "Company" would be removed, and on the third pass; "Partners". On the fourth pass, no match (the word "Investment") would be discovered and would trigger the end of the noise words edit routine.

The size of the string variable used during the edit process to create the search key for the debtor name in both the record indexing and search process should not be equal to the database record field length. A max length variable or field implies truncation: the elimination of characters on the right side of the maximum length. If truncation occurs amid ending noise words the edit routine would fail to produce the desired search key.

Additionally, the data entry or other electronic workspace used to input the debtor name should match the character length of the string variable used by the edit procedure; not the database record field length. An extended data input workspace and string variable will ensure that the noise words edit routine can produce the necessary search key/criteria to achieve the desired search effect. Truncation of the search key should only occur after processing the entire edit procedure prior to insertion into the search key field of the database record. The debtor name field used for reporting purposes can be truncated without concern for the effect on the business ending since it has no impact on search effect. For example, assume that the database field length is a maximum of 60 characters and that the string variable length for use by the edit procedure is 60 characters. The name, “A Long Debtor Name Truncated Amid Ending Noise Words, Limited Liability Company”, would be reduced to “A Long Debtor Name Truncated Amid Ending Noise Words, Limite”. As a result, the noise words edit routine would fail to discover any matching noise words at the right end of the name. However, if the data input workspace and string variable for use by the edit procedure was 120 characters then the noise words edit routine would produce the desired search key/criteria.

MARS 503.5 - The word “the” at beginning of the search criteria is disregarded.
This rule requires a simple routine to eliminate “the” at the beginning or on the left-side of the debtor name. While the rule directs the filing office to remove “the” at the beginning of the search criteria, this edit routine must also operate to produce search keys during the debtor name indexing process. If the past data entry practice moved “the” from the beginning of the name to the end of the name, the filing office should consider regenerating the search keys for target filings to eliminate “the” at the end of the name as well as at the beginning of the name.

MARS 503.6 - All spaces are disregarded.

503.6 requires an edit routine to eliminate spaces from the debtor name.

MARS 503.7 – For first and middle names of individuals, initials are treated as the logical equivalent of all names that begin with such initials, and no middle name or initial is equated with all middle names and initials. For example, a search request for “John A. Smith” would cause the search to retrieve all filings against all individual debtors with “John” as the first name, “Smith” as the last name, and with the initial “A” or any name beginning with “A” in the middle name field. If the search request were for “John Smith” (first and last names with no designation in the middle name field), the search would retrieve all filings against individual debtors with “John” as the first name, “Smith” as the last name and with any name or initial or no name or initial in the middle name field.

503.6 requires a special edit routine to create search keys and search criteria for names of individuals as well as a specialized search. Other rules of 503 should be applied to each individual name component prior to concatenation into the search keys to the extent that such rules are applicable to individual names. 503.4 and 503.5 relate specifically to organization names, but all other rules are applicable to the names of individuals as well as organizations.

To obtain the desired search effect for individual names, the edit routine could create multiple search keys for each individual name record in the database. For the individual name, “Smith, John Anderson”, the search keys would be: Smith|John|Anderson, Smith|John|A, Smith|J|Anderson, Smith|J|A, Smith|John, and Smith|J.

To avoid the use of multiple queries and other runtime gymnastics, search keys and search criteria can be defined by type for each permutation of a given individual name.

$Type_1$ as Last, Full First, Full Middle
$Type_2$ as Last, Full First, Middle Initial
$Type_3$ as Last, First Initial, Full Middle
$Type_4$ as Last, First Initial, Middle Initial
$Type_5$ as Last, Full First
$Type_6$ as Last, First Initial

For example, given a financing statement that identifies an individual debtor name, “Smith, Tom Ted”, 6 search keys would be assigned to the database record as follows:

Table 1: 6 Type Search Keys

$Type_1$	$Type_2$	$Type_3$	$Type_4$	$Type_5$	$Type_6$
Smith|Tom|Ted	Smith|Tom|T	Smith|T|Ted	Smith|T|T	Smith|Tom	Smith|T

A search request for the individual name, “Smith, Tom T”, would be assigned search criteria utilizing the same logic used to create search keys as described above.

Table 2: 6 Type Search Criteria

$Type_1$	$Type_2$	$Type_3$	$Type_4$	$Type_5$	$Type_6$
Smith|Tom|T	Smith|Tom|T	Smith|T|T	Smith|T|T	Smith|Tom	Smith|T

By organizing and assigning multiple search keys/criteria for individual names, a maximum of 6 conditions within a single query are required to return the matching dataset required by 503.7. Because there are 6 search keys/criteria that can be created from an individual name, there are 6 different types of searches that require unique query conditions for each search type. For example, a search request given the name “Smith, Tom T” would be a $Type_2$ search. The search types are the same as the search key/criteria types except for $Type_1$ which includes a last name only search.

$Type_1$ as Last, Full First, Full Middle or Last Name Only
$Type_2$ as Last, Full First, Middle Initial
$Type_3$ as Last, First Initial, Full Middle
$Type_4$ as Last, First Initial, Middle Initial
$Type_5$ as Last, Full First
$Type_6$ as Last, First Initial

In the following search type examples, row "S" contains the search criteria $Type_{1-6}$ for a given individual name search request. Row "F" contains the search keys $Type_{1-6}$ for a given filing record in the database. In the first example of a $Type_1$ search, each search criteria, $Type_{1-6}$ are compared to the $Type_1$ search key of the database record. In the second example of a $Type_2$ search, each search criteria, $Type_{2-6}$ are compared to the $Type_2$ search key of the database record. Filings would be reported if any one of the search criteria matches the database search key related to the search type. The query conditions for the remaining search types follow the same logic pattern.

Search $Type_1$ = Full Last, Full First, Full Middle or Last Name Only

Name Searched = Smith, Tom Ted ST1 = FT1 = Match

	$Type_1$	$Type_2$	$Type_3$	$Type_4$	$Type_5$	$Type_6$
S	Smith|Tom|Ted	Smith|Tom|T	Smith|T|Ted	Smith|T|T	Smith|Tom	Smith|T

	$Type_1$	$Type_2$	$Type_3$	$Type_4$	$Type_5$	$Type_6$
F	Smith|Tom|Ted	Smith|Tom|T	Smith|T|Ted	Smith|T|T	Smith|Tom	Smith|T

Search $Type_2$ = Full Last, Full First, Middle Initial

Name searched = Smith, Tom T ST2 = FT2 = Match

	$Type_1$	$Type_2$	$Type_3$	$Type_4$	$Type_5$	$Type_6$
S	Smith|Tom|T	Smith|Tom|T	Smith|T|T	Smith|T|T	Smith|Tom	Smith|T

	$Type_1$	$Type_2$	$Type_3$	$Type_4$	$Type_5$	$Type_6$
F	Smith|Tom|Ted	Smith|Tom|T	Smith|T|Ted	Smith|T|T	Smith|Tom	Smith|T

Search Type$_3$ = Full Last, First Initial, Full Middle

Name Searched = Smith, T Ted ST3 = FT3 = Match

	Type$_1$	Type$_2$	Type$_3$	Type$_4$	Type$_5$	Type$_6$
S	Smith|T|Ted	Smith|T|T	Smith|T|Ted	Smith|T|T	Smith|T	Smith|T

	Type$_1$	Type$_2$	Type$_3$	Type$_4$	Type$_5$	Type$_6$
F	Smith|Tom|Ted	Smith|Tom|T	Smith|T|Ted	Smith|T|T	Smith|Tom	Smith|T

Search Type$_4$ = Full Last, First Initial, Middle Initial

Name searched = Smith, T T ST4 = FT4 = Match

	Type$_1$	Type$_2$	Type$_3$	Type$_4$	Type$_5$	Type$_6$
S	Smith|T|T	Smith|T|T	Smith|T|T	Smith|T|T	Smith|T	Smith|T

	Type$_1$	Type$_2$	Type$_3$	Type$_4$	Type$_5$	Type$_6$
F	Smith|Tom|Ted	Smith|Tom|T	Smith|T|Ted	Smith|T|T	Smith|Tom	Smith|T

Search Type$_5$ = Full Last, Full First

ST1= Smith, Tom ST5 = FT5 = Match

	Type$_1$	Type$_2$	Type$_3$	Type$_4$	Type$_5$	Type$_6$
S	Smith|Tom	Smith|Tom	Smith|T	Smith|T	Smith|Tom	Smith|T

	Type$_1$	Type$_2$	Type$_3$	Type$_4$	Type$_5$	Type$_6$
F	Smith|Tom|Ted	Smith|Tom|T	Smith|T|Ted	Smith|T|T	Smith|Tom	Smith|T

Search Type$_6$ = Full Last, First Initial

ST1= Smith, T ST6 = FT6 = Match

	Type$_1$	Type$_2$	Type$_3$	Type$_4$	Type$_5$	Type$_6$
S	Smith|T	Smith|T	Smith|T	Smith|T	Smith|T	Smith|T

	Type$_1$	Type$_2$	Type$_3$	Type$_4$	Type$_5$	Type$_6$
F	Smith|Tom|Ted	Smith|Tom|T	Smith|T|Ted	Smith|T|T	Smith|Tom	Smith|T

503.8 - After taking the preceding rules into account to modify the name of the debtor requested to be searched and to modify the names of debtors contained in active financing statements in the UCC information management system, the search will reveal only names of debtors that are contained in active financing statements and, as modified, exactly match the name requested, as modified.

The final rule, 503.8 tells the filing officer to apply the preceding rules in performing a search. The rule directs the filing office to use the edit routines required by the preceding rules to: (1) normalize debtor names to create search keys saved with each financing statement record; and, (2) to identically edit the debtor names given within a search process to produce a normalized search criteria. A question that arises on the application of the edit routines is - What order or sequence should the edit routines be executed within the overall edit procedure? A specific sequence of routine execution is necessary to achieve the intended search effect of 503. The edit routines should be processed in the following order:

If organization name:

1. Convert character case to a standard case upper or lower (503.2)
2. Convert “&” to “and” then remove punctuation and accent marks (503.3)
3. Remove “the” at the beginning (and the end depending upon past data entry practice) (503.5)
4. Remove spaces (503.6)
5. Remove noise words (503.4)

The sequence of the edit routines 4 and 5 would be reversed if spacing was not eliminated from noise word phrases contained in the noise word list.

If an individual name:

1. Convert character case to a standard case upper or lower (503.2)
2. Remove punctuation and accent marks (503.3)

3. Remove spaces from each individual name field (503.6)
4. Create multiple search keys or search criteria (503.7)

Conclusion

No filing office function is more important than or as complex as the search. I hope that the ideas presented in this paper help both filing office administrators and information technologists in their quest to understand, develop, and implement search logic that meets the requirements of MARS 503.

Full Text of Original Email:

Thu 09/29/2011 5:46 PM

Hi,

I'm embarrassed that I can't remember this rule, but what does the model search logic say we're supposed to do with "double" ending noise words or even embedded noise words? The model rule says:

503.1.5 The following words and abbreviations at the end of an organization name that indicate the existence or nature of the organization are “disregarded” to the extent practicable as determined by the filing office’s programming of its UCC information management system: *[Insert the filing office’s own “Ending Noise Words” list here.]*

So is it just the word(s) that come at the end, or is it a reiterative process? For example, "Acme LLC, Limited Liability Company" has two "ending noise words": LLC and Limited Liability Company. Does the search logic only take off "Limited Liability Company"? or does it also strip LLC, resulting in a normalized character string: "ACME"?

If it is a reiterative process, does it look for all instances of the noise word in the name? In other words, does "LLC Acme, Limited Liability Company" normalize to "ACME" or "LLC ACME"?

Thanks,

Tom