

NBK Draft Record Quality Measures

Pilot v1. July 2020

1. Introduction

One aim of the NBK has been to support libraries in reviewing catalogue data and helping to raise quality where this may be needed, improving catalogues locally as well as for record share through Library Hub Cataloguing. Improved data quality also helps with record deduplication, benefitting both resource discovery and collection management. Now that the NBK is established we are beginning to plan what an 'Analyse' service might look like, to support NBK contributors with data review and upgrade.

For example:

- ❖ You may have concerns about the records you are receiving from a particular ebook supplier. An Analyse service might allow you to review those records to assess whether there is actually a problem and what the issues are to focus on in discussion with the supplier.
- ❖ You might wish to identify basic records from a past retrocon that need upgrading. We could then look at options to request 'better' records to either replace the record, or possibly to request particular fields that are missing from your records, thereby avoiding the loss of local content.

One important element of this work is an understanding of record quality and what a 'better' record might look like. Of course, there isn't necessarily a single answer and different libraries might have varying views on how they would like to see records ranked. So we also want to see how we could combine a measure of quality with other preferences.

Aims

The quality measures are not intended to be about the 'perfect' record, rather they are a practical working tool that will help us to support you in the review and upgrade of records where this is needed. The Analytics service will enable you to review records using standard measures such as missing or incomplete fields, but we also feel that a general measure of the quality of each record is valuable for two main reasons:

- ❖ To help you identify problem records by multiple criteria rather than just looking at them from the perspective of a single problem
- ❖ To give us the potential to identify records that are 'better' than your existing record, that we might then make available to you

The diversity of the records in the NBK, and the current usage constraints around some records, mean that we may not have a 'perfect' record for any document. But we do want to be able to offer the best available record(s) to support catalogue development. We are at the early stages of this work and there are a lot of questions around the best approaches to some of this activity which we will be working through as we begin to establish a trial version for exploring options with you over coming months. We will be learning as we go along and will be aiming to create something we can build on. However, the

record quality measures will be a foundational element of a new database to support analytics activity, so we want to get an initial version of these measures in place at the start.

Business case

As we think about how an Analyse service will develop, we will also be examining the business case to support the work involved in creating and supporting a new service. It may be that some aspects of such a service are chargeable, as an add-on to Jisc members and others, in order to enable us to proceed with this work.

Acknowledgements

We would like to thank all those who have provided us with feedback on this, and related, questions over the last couple of years, as well as those of you that participated in the quality measures consultation, we very much appreciate your input. We have tried to incorporate the comments we have received into the thinking underlying this work, as well as using the feedback on the quality measures to make a number of changes, both to the error checking and the quality measures themselves.

2. NBK Quality Measures: Background

Criteria

Several criteria have guided our approach to the record quality measures:

- ❖ **Transparency:** We want the quality measures to be clear and straightforward so that if you are using the service you can understand why any record has been given a particular score. This makes it much easier for you to assess whether it is working as you might wish or whether there are issues we might want to address to improve the service.
- ❖ **Sustainability:** We want the quality measures to be sufficiently straightforward that they can evolve over time, in the light of feedback, or in response to changes in the underlying data and the data standards. Changes will require a full rebuild of the data so it would not be a regular event, but it is also not fixed. We wish to avoid complex algorithms that are only fully understood by the original developer and which are problematic to maintain because of the difficulty of understanding the implications of any change.
- ❖ **Practicality:** Since January 2020 we have been loading and updating between 1.25 and 8.25 million records a week, a total that is likely to grow with the number of NBK contributors. This means we need a process that can apply a quality measure to all the new and amended records in each update without impacting on the overall speed of processing.
- ❖ **Flexibility:** It will be possible to use the quality measures alone to work with the data, but we also want these to be options that in future might be combined with other preferences. For example:
 - you might want the best available RDA record for a document
 - you might want to review your map records to see where you have records of reasonable quality, but that are still missing fields you would like included, eg. a 255.
 - you might prefer a 'better' record from a particular source, as long as that record is above a certain quality threshold

We are aiming for ways of measuring record quality that give a straightforward and, hopefully, usable approach to supporting your work in record review and upgrade.

General Model

We intend the measures to be flexible to allow different approaches and support different views of what a good record looks like. We have taken a two level approach:

- ❖ **Level 1 - Breadth:** The first check assigns an overall quality value to a record. The focus here is on the breadth of coverage, essentially the range of fields included. Fields are grouped into categories and where a record has any one of the fields in a category it is given a score of one. Adding the category scores gives you the level 1 quality score for that record. There are 19 categories, so this gives you a score range of 0-19. (See Section 4 for details of these categories)

This can result in multiple records for the same document with the same score. So a second quality value helps to distinguish between these.

- ❖ **Level 2 - Depth:** In this second check the focus is on the depth of coverage, for example, rather than just checking that there is a 6XX field, looking at how many 6XX fields are included.

The scale here can be as wide as the records are extensive.

- ❖ If both level 1 and level 2 checks come out with the same values for two records they are regarded as being of equal quality.

The two-level approach offers flexibility, so the measures can be used independently depending on the data you are looking at and what you want from any 'better' records.

The grouping of fields into categories at level 1 generally brings together fields with similar functions, aiming to provide an overview of a record across the basic features required for effective local data use, including resource discovery. Assigning a field to a category is essentially giving it a weighting, so there is a balance to be struck between separation and merger of fields within categories. For example, bringing together classmark fields (050, 082) obviously reduces the detail, but to separate them out would give each type of classmark an equivalent weighting to the presence of an author in the record.

The separation of the more general fields (eg. 300) from more material specific fields (eg. 306) helps to provide greater granularity in the scoring. For example, for an audio-visual item it might help distinguish between an adequate but general record from one created by a specialist with more material specific details.

The full count of fields at level 2 gives the more detailed overview of the scale of the record. Two records with the same level 1 score could be quite different in terms of comprehensiveness, for example one record might include multiple 700 fields giving detailed contents for a compilation. But it is not without its limitations. A record with rather basic bibliographic content could theoretically get a high quality score as a result of a large number of subject headings, which might not be what you want.

The advantages and disadvantages of each approach are likely to become clearer with use. And it may well be that different libraries develop a preferred approach, or that the approach may vary depending on the nature of the data in question and the review activity. The intention is that the quality score can be combined with other options to give a flexible approach to record review.

The quality measures give a relative not an absolute score to a record. So, a record for the first edition of a book published in the 1950s that is not part of a series will not have the potential to get as high a score as the third edition of a book that is part of a series and published in 1990. The measures are more about comparing similar materials than disparate ones. We've taken as a starting point that someone using the quality measures is likely to be wanting to review particular subsets of data eg. comparing 19th C maps with other 19th C maps. However, the quality scores could be used as another way of identifying poor quality data across the board, as a record with a quality score of 3 or 4 is likely to be rather basic regardless of the type of material involved. This ties in with our aim of Flexibility as we envisage the quality measures being used with other search options as one tool amongst a variety of options for reviewing your data.

This is something to consider as you use the pilot Analyse service. There are many ways we could change the measures but whilst many fields are important making an 'ideal' record, as one person noted in our initial consultation, adding or changing one or more field checks may actually have little overall impact on the relative quality score assigned to a set of records. So it is once a pilot service is available that we will see where changes to the measures might have most practical benefit.

The proposed model does not represent a final and fixed process. It will be subject to review and has been designed with consideration of the need to respond to feedback as well as changes to incoming data and data standards. However, after the initial development period we would not anticipate regular changes. Stability seems important to avoid potential confusion over the way the measures are applied, whilst any changes to the quality measures will require significant data reprocessing so would take time to implement.

Data coverage

We will be creating a new database to support the Analyse service trial. A number of catalogues will be excluded, as the data review seems unlikely to be of relevance to these libraries:

- ❖ Catalogues will be excluded where they are supplied in non-MARC formats
- ❖ Catalogues will be excluded where they have been converted into MARC from a non-MARC format before being supplied to us, and require pre-processing before we can load them

Otherwise, all data will be included in the new database in the form supplied, so that you have a full view of your own catalogue records.

Dropped records

The database will include records that have been dropped during the load and thus excluded from Library Hub Discover and Compare. This will give you a way of reviewing records dropped for any of several reasons:

- ❖ Records matching library-defined criteria for exclusion eg. a record with a specified location code and no other physical or electronic location
- ❖ Any record with no 245 is rejected and dropped from the load into Discover and Compare
- ❖ Any record that cannot be parsed is rejected and dropped from the load into Discover and Compare, eg. where there is no Leader or the Leader is the incorrect length
- ❖ Where records have duplicate record IDs the second and subsequent records with the duplicate ID will be rejected and dropped from the load into Discover and Compare

Restrictions on record availability

However, where we look in future at the question of supplying 'better' records, the same data restrictions will apply as is the case for Library Hub Cataloguing:

- ❖ We will be working within the current licensing restrictions that relate to some records. A record with licensing restrictions will be given a quality score so the information is available to you as the originating library, but that record will not be made available to other libraries where there are restrictions on re-use of that data
- ❖ Where you have asked us not to make your catalogue available for shared cataloguing these records will be included in the analytics service, and will be given a quality score, but they will not be available to other libraries as part of a future record upgrade option

It is likely that to support both catalogue review and record upgrade we will need two parallel sets of quality scores:

- ❖ For record review all elements of the records would be included, and quality scores assigned, so you get a full picture of your catalogue
- ❖ However, for us to provide 'better' records in future we would want a second set of quality scores:
 - OCLC provenance records would be assigned a quality score that is based only on those fields that OCLC permit to be included in their 'mini-MARC' record.
 - we would exclude from the quality score those fields with a \$5 which are unlikely to reflect the potential value of a record to another library.

3. Error checking

Note

The error checks as described here may be changed during development if this becomes necessary for practical application in the available timescale. If this is necessary we will update the description of the measures and will add other features as potential future developments.

Error checks

We will be checking for the presence of particular fields, but beyond this we want to know that the fields are accurate, in as far as that is possible. We wish to avoid giving a high 'quality' score to a record that has a good range of fields, but where the structure of those fields is poor, which might, in turn, reflect limitations in the record content.

To begin with the focus is on the things that are straightforward to check, as outlined below, so the MARC structure and clearly defined contents, such as the validity of codes at each character positions in the Leader. We are essentially looking at whether a field is 'well formed'. However, whilst we are checking the structural accuracy of the record, we are not attempting to check the 'relevance' of the content this stage. For example, we will check that the Leader character position 06 'c' is valid for that position, but we will not try to determine whether the record actually represents notated music.

Once the basics have been established, we are interested in expanding the data checking to include some basic content review. So whether a map has the correct basic codes in the Leader and 007; or whether the non-filing characters are correct for English language materials. However, the further we move into checking record content the greater the level of uncertainty this may introduce, for example, trying to distinguish between a medical or geographic atlas can be problematic in a brief record with Leader cp06 a, whilst a 245\$a starting 'A is for Apple...' might not want non-filing characters. So, these types of check might be considered in future for data review rather than necessarily informing the record quality measures.

Proposed error checks

We will need to experiment with processing speeds, but the aim is that if there are errors in a field then it will not be included in the quality score. We will be looking at applying the following checks:

Leader

- ❖ Are the codes in the Leader correct for each character position?

007

- ❖ Do the first two character positions of the 007 contain valid codes?

008

- ❖ Is there an 008? If there is no 008, or it is empty, the record can only get a maximum score of 1
- ❖ Is the 008 field the correct length?
- ❖ Does the 008 field have content other than space or |?
- ❖ Are the codes in the 008 correct for each character position?

Identifiers

- ❖ In the 020 \$a is the ISBN correctly formatted? i.e. the check digit is valid and number does not contain hyphens; \$a does not contain bracketed text
- ❖ In the 022 \$a and/or \$l is the ISSN correctly formatted? i.e. nnnn-nnnn and \$a does not contain bracketed text

All other fields

- ❖ Does the field have content other than space or punctuation?
- ❖ Is the field content all uppercase?
- ❖ Does a field have valid indicators?
- ❖ Are the subfield codes valid?
- ❖ Are any subfield repeats correct?
- ❖ Are any field repeats correct? If there are repeating occurrences of a non-repeatable field then all occurrences of the field are treated as errors.
- ❖ Are there character set errors in a field?

Multi-field checks

- ❖ If there is more than one 1XX field all are flagged as errors
- ❖ 245 first indicator 0 but record includes 1XX – 245 flagged as an error
- ❖ 245 first indicator 1 but record does not include 1XX – 245 flagged as an error
- ❖ 490 first indicator 0 but record includes one or more of 800-830 – 490 flagged as an error
- ❖ 490 first indicator 1 but record does not include one or more of 800-830 – flagged as an error
- ❖ 240 and 130 mutually exclusive, if both occur they are both flagged as an error
- ❖ Presence of a 240 in a record with no 100, 110, or 111 field - flagged as an error

The above checks do not assert that the field content is correct in the context of the material type or the individual document. So a 100 field may be correctly structured but may contain the wrong author for the work described by the record.

In addition to general checks we would like to look at filtering out less 'standard' or less complete fields, so we have suggested some field specific checks as indicated in the 'table of fields' below. These are intended to try and exclude fields where the content is largely of local relevance to the originating library, or the content is very limited eg:

- ❖ A 650 containing local subject terms
- ❖ A 780 that only contains a \$w or standard number

Other error checks

We will do some additional data checking that will generate issues for data review. Some of these are warnings rather than definite errors as in some cases they may be correct in the context of the record. They are included here for completeness and may be added to/amended in future as we get feedback.

- ❖ An RDA record will be checked for a 336/7/8 and the absence of these will be flagged as an issue

- ❖ 020s in an RDA record will be checked for a \$q and the absence of this will be flagged as an issue
- ❖ 7XXs in an RDA record will be checked for a \$e and the absence of this will be flagged as an issue
- ❖ An RDA record will be checked for the presence of a 260 and this will be flagged as an issue
- ❖ Does the 245 have a \$c?
- ❖ Does the 008 lack a date in the cp07-10? An acceptable date will include 1uuu, 19uu, 193u, 1934
- ❖ Is the 245\$a all uppercase?
- ❖ Does the record contain both a 260 and 264?
- ❖ Does the character set asserted in the Leader character position 09 match that of the characters used in the record?
- ❖ Is the language of cataloguing NOT 040 \$beng?
- ❖ Is the record lacking physical format information – ie. has none of the following: 245\$h, 300\$a, 007cp00-01, 338 \$a or \$b
- ❖ Is the record lacking coded language information – ie. has none of the following: 008 cp35-37, 041
- ❖ Possible problem with non-filing chars in 245 for English language material?
- ❖ Possible problem with non-filing chars in 240 for English language material?
- ❖ Possible problem with non-filing chars in 730 for English language material?

Some of these tests will not be 100% reliable, eg. checking for non-filing characters will be prone to error, so we will need to review them in the light of feedback.

4. Draft Quality Measures

Note

The quality measures as described here may be changed during development if this becomes necessary for practical application in the available timescale. If this is necessary we will update the description of the measures and will add other features as potential future developments.

Field coverage

We have taken as a starting point the BIBCO Standard record (<https://www.loc.gov/aba/pcc/bibco/documents/PCC-RDA-BSR.pdf>) and CONSER Standard Record (<https://www.loc.gov/aba/pcc/conser/documents/CONSER-RDA-CSR.pdf>). Including fields to provide for both basic record content as well as those of particular relevance to specific materials.

The table below shows the fields suggested for inclusion in the record quality scores, grouped into categories. Each category counts as '1' in generating the Level 1 score for a document, whilst the fields are counted individually, with repeats, for the level 2 score. So a record with all three of a good Leader, 007 and 008 would get a level 1 score of '1', and a level 2 score of '3'.

Table of fields for generating record quality scores

Category	Field(s)
Leader	Includes <ul style="list-style-type: none"> • Leader with valid codes at each character position (If there is no leader, or it is not well formed, the record is rejected)
Control fields	Includes <ul style="list-style-type: none"> • 007 • 008 If there is no 008, or it is empty, the record can only get a maximum score of 1
Identifier	One or more of the following: <ul style="list-style-type: none"> • 020 - International Standard Book Number. Must have \$a or \$z • 022 - International Standard Serial Number • 024 - Other Standard Identifier. First indicator 0,1,2,3,4,7 • 026 - Fingerprint Identifier • 027 - Standard Technical Report Number • 028 - Publisher or Distributor Number • 030 - CODEN Designation • 088 – Report Number
Coded language/place/time	Includes one of the following: <ul style="list-style-type: none"> • 041 Language • 043 Geographic area code • 045 Time Period of Content • 046 Special Coded Dates
Class number	One or more of the following: <ul style="list-style-type: none"> • 050 - Library of Congress Call Number • 082 - Dewey Decimal Classification Number
Uniform title	One or more of the following: <ul style="list-style-type: none"> • 130 - Main Entry - Uniform Title • 240 - Uniform Title • 730 - Added Entry - Uniform Title
Names	One or more of the following: <ul style="list-style-type: none"> • 100 - Main Entry - Personal Name • 110 - Main Entry - Corporate Name • 111 - Main Entry - Meeting Name • 700 - Added Entry - Personal Name • 710 - Added Entry - Corporate Name

	<ul style="list-style-type: none"> • 711 - Added Entry - Meeting Name
Title Statement	<p>Includes a 245 with a minimum of either \$a or \$k</p> <ul style="list-style-type: none"> • 245
Statement of responsibility	<p>Includes</p> <ul style="list-style-type: none"> • 245 \$c
Other titles	<p>One or more of the following:</p> <ul style="list-style-type: none"> • 246 - Varying Form of Title • 247 - Former Title
Edition	<p>Includes the following:</p> <ul style="list-style-type: none"> • 250 - Edition Statement
Version information	<p>One or more of the following:</p> <ul style="list-style-type: none"> • 254 - Musical Presentation Statement • 255 - Cartographic Mathematical Data • 257 - Country of Producing Entity • 033 - Date/Time and Place of an Event • 034 - Coded Cartographic Mathematical Data
Publication details	<p>One of the following:</p> <ul style="list-style-type: none"> • 260 - Publication, Distribution, etc. (Imprint) • 264 - Production, Publication, Distribution, Manufacture, and Copyright Notice
Physical description	<p>Includes the following:</p> <ul style="list-style-type: none"> • 300 - Physical Description
Other Physical information	<p>One or more of the following:</p> <ul style="list-style-type: none"> • 306 - Playing Time • 310 - Current Publication Frequency • 321 - Former Publication Frequency • 340 - Physical Medium • 342 - Geospatial Reference Data • 344 - Sound Characteristics • 346 - Video Characteristics • 347 - Digital File Characteristics • 351 - Organization and Arrangement of Materials • 382 Medium of performance • 383 Numeric Designation of Musical Work • 384 Key
Notes	<p>One or more of the following:</p>

	<ul style="list-style-type: none"> • 502 - Dissertation Note • 504 - Bibliography, etc. Note • 505 - Formatted Contents Note • 508 - Creation/Production Credits Note • 510 - Citation/References Note • 511 - Participant or Performer Note • 520 - Summary, etc. • 533 - Reproduction Note • 546 - Language Note • 588 - Source of Description Note
Subject	<p>One or more of the following, must have second indicator 0, 2 or 7.</p> <ul style="list-style-type: none"> • 600 - Subject Added Entry - Personal Name • 610 - Subject Added Entry - Corporate Name • 611 - Subject Added Entry - Meeting Name • 630 - Subject Added Entry - Uniform Title • 647 - Subject Added Entry - Named Event • 648 - Subject Added Entry - Chronological Term • 650 - Subject Added Entry - Topical Term • 651 - Subject Added Entry - Geographic Name • 655 - Index Term - Genre/Form
Related items	<p>One or more of the following. Must include \$a or \$t:</p> <ul style="list-style-type: none"> • 773 - Host Item Entry • 775 - Other Edition Entry • 780 - Preceding Entry • 785 - Succeeding Entry
Series	<p>One or more of the following. Must include \$a:</p> <ul style="list-style-type: none"> • 490 - Series Statement • 800 - Series Added Entry - Personal Name • 810 - Series Added Entry - Corporate Name • 811 - Series Added Entry - Meeting Name • 830 - Series Added Entry - Uniform Title

5. Application

Quality Level 1 - Breadth:

The Level 1 measure of quality is checking for the presence of the fields shown in each category in the table. When a record has one or more of the fields that are included in a category, that category gets a score of 1. The category scores are then totalled to give the overall quality score.

There are also a couple of general scores:

- ❖ A record with no 008 would be deemed to be sub-standard and will only ever get a level 1 score of 1 overall.
- ❖ A 'dropped' record will always have a quality score of 0

Quality Level 2 – Depth

The Level 2 measure of quality is checking for the number of the fields, shown in the table above, in two ways:

- ❖ A count of repeating fields eg. 650
- ❖ A count of multiple fields within a category eg. presence of both a 382 and a 383 in a record

For example, the following subject terms:

60010\$aWilson, John,\$d1696-1751.

650 0\$aNatural history\$zEngland\$zLake District National Park.

650 0\$aNaturalists\$zEngland\$zCumbria.

651 0\$aLake District National Park (England)\$xHistory.

651 0\$aCumbria (England)\$xIntellectual life.

Would generate scores of:

- ❖ Level 1: Breadth = 1
- ❖ Level 2: Depth = 5

The maximum level 1 score is equal to the number of categories, whilst there is no maximum score for level 2, that is entirely down to the extent of the record.

As we develop the quality measures we will consider whether it is useful to include a maximum count for the number of occurrences of fields in the subject category, or to check the 6XX \$2 source code.

A set of sample records, with quality scores, is included in section 6 below.

Exclusions

The table obviously does not include every possible MARC field, so the reasons for some of the exclusions are given below.

- ❖ We are not assessing local fields, so for the purposes of the quality score we will ignore any field with a 9 (eg. 509) other than 490. In the analytics service we can report on the presence of these

local fields, if that seems useful, and could also report on local errors such as a field where the institution code in the \$5 is not that of the contributor that has sent us the record.

- ❖ Leader cp 17 encoding level. The use of # blank to indicate a full level record makes this unreliable.
- ❖ 336/7/8. These should be present in every RDA record, so to that extent they are not useful for distinguishing between records, and if a library has had an automated conversion of records to RDA there is a question over how useful these may be as an indication of overall record quality
- ❖ 362 Dates of Publication and/or Sequential Designation. There is a question over whether this is/has been used to show generic details about a journal, or local holdings of a journal, and therefore how useful this might be as an indication of overall record quality
- ❖ We have excluded a few *very* low use fields, where usage is up to a few hundred records, as their impact would be insignificant and error rates may be high
- ❖ 5XX note fields, apart from those noted in section 4 above. These may be open to variable usage
- ❖ Some 7XX fields. They can be relatively low use and in some cases may show a local focus.
- ❖ 880 fields. Not all libraries may see these as of particular significance and it would be possible to express an interest in these by combining a quality score with a requirement for an 880 to be included.
- ❖ We are not assessing holdings so we have excluded all 8XX fields, including the 856
- ❖ We have not specified a particular style of record, RDA vs AACR2. The intention would be to allow a preference to be specified by combining a quality score with a requirement for an RDA record, where available.

6. Sample of Map records scored with draft NBK Data Quality measures

The following map records have been scored using the draft NBK Quality Measures.

Notes:

- ❖ The records have been scored manually and the fields have not been error checked. An automated process that includes error checking might identify data problems that would affect the final scoring.
- ❖ Local fields have been removed.
- ❖ Fields not used in scoring the record are shown in blue and have no associated score.
- ❖ In the Level 1 Score column, the fields that are included in the same category get an overall category score of 1. So, in the examples, the first occurrence of a field in a category is assigned the score for that category, whilst the second and subsequent fields in that category are shown as 'repeat' with the category in grey.
- ❖ Each occurrence of a field at level 2 is scored individually.
- ❖ The field categories and equivalent shorthand term used in the table are given below. The Categories shown in blue are those for which there are no relevant fields in the example records:

Field Category	Table shorthand
Leader	LDR
Control fields	Control fields

Identifier	Identifier
Coded language/place/time	Coded L/P/T
Class number	Class
Uniform title	n/a – relevant fields do not appear in examples
Names	Names
Title Statement	Title
Statement of Responsibility	SoR
Other titles	Other title
Edition	n/a – relevant fields do not appear in examples
Version information	Version
Publication details	Publication
Physical description	Physical
Other Physical information	n/a – relevant fields do not appear in examples
Notes	Notes
Subject	Subject
Related items	n/a – relevant fields do not appear in examples
Series	n/a – relevant fields do not appear in examples

Map Record Sample

	MARC	Level 1 Score	Level 2 Score
1		= 11	= 13
	LDR01206cam 2200337 4500	LDR = 1	1
	001u31460		
	003SIRSI		
	008 1997 eng	Control fields = 1	1
	020 \$a1869533356	Identifier = 1	1
	0410 \$aeng	Coded L/P/T = 1	1
	044 \$anz		
	1001 \$aMcKinnon, Malcolm.	Main Entry = 1	1
	24500\$aBateman New Zealand historical atlas =\$bKo papatuanuku e ta koto nei /	Title = 1	1
	\$cMalcolm McKinnon (editor) ; with Barry Bradley and Russell Kirpatrick.	SoR = 1	1
	24631\$aKo papatuanuku e takoto nei	Other title = 1	1
	260 \$aAlbany, Auckland :\$bDavid Bateman in association with Historical Branch, Department of Internal Affairs,\$c1997.	Publication = 1	1
	300 \$a290p. :\$bill., col. diags., col. maps, photos. ;\$c37cm.	Physical = 1	1
	500 \$aNotes and sources: p. 228-281.		

	7001 \$aBradley, Barry.	Added entry = 1	1
	7001 \$aKirkpatrick, Russell.	repeat Added entry	1
	7102 \$aNZ Department of Internal Affairs.\$bHistorical Branch.	repeat Added entry	1
2		= 13	= 23
	LDR01561nem a2200385 a 4500	LDR = 1	1
	001013287141		
	003UKOxU		
	00519990129134336.0		
	007ad canzn	Control fields = 1	1
	008980528s1997 nz bc e 1 eng	repeat Control fields	1
	010 \$a98140343 /MAPS		
	020 \$a1869533356	Identifier = 1	1
	0340 \$aa	Version = 1	1
	040 \$aDLC\$cDLC\$dDLC		
	050 00\$aG2796.S1\$bB3 1997	Class = 1	1
	052 \$a9081		
	24500\$aBateman New Zealand historical atlas = \$bKo papatuanuku e ta koto nei /	Title = 1	1
	\$cMalcolm McKinnon (editor) with Barry Bradley and Russell Kirkpatrick ; [cartography by Terralink NZ Ltd.].	SoR = 1	1
	24630\$aNew Zealand historical atlas	Other title = 1	1
	24631\$aKo papatuanuku e takoto nei	repeat Other title	1
	255 \$aScales vary.	repeat Version	1
	260 \$aAuckland, N.Z. : \$bDavid Bateman in association with Historical Branch, Dept. of Internal Affairs, \$c1997.	Publication = 1	1
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338 \$avolume\$bnc\$2rdacarrier		
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