

UEB Ready? Day 1: Overview of the code

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Objectives

- Participants will be able to describe the structure of BANA, its mission, and how it works
- Participants will list several reasons why the UEB project was begun.
- Participants will be able to braille practice sentences in UEB with the rules we will cover.
- Participants will be able to list resources available for them to learn more about UEB.

What Is BANA?

- The BANA Board consists of representatives from organizations of blind people, educators, and transcribers
- International: 17 member organizations, plus 3 associate members
- 8 technical committees; 8 ad hoc committees; also general committees such as publications, and board committees such as bylaws, & several task forces
- Committees are designed to include at least one braille reader, one transcriber, one educator, one person from each member country

How Does BANA Work?

- BANA Board meets in person twice a year as well as by teleconference throughout the year
- Work is done by Board and committees all year long
- BANA is indebted to its hard-working volunteers
- Numerous projects ongoing:
 - Graphing calculator guidelines
 - Chess guidelines
 - Standardized test guidelines*and many others!*

Background

- Drastic changes in the appearance and production methods of print: new characters, icons, layouts, and fonts
- Print is increasingly read from screens; schools are increasingly providing textbooks digitally rather than on paper.
- The boundaries between "technical" materials and everyday materials increasingly blurred (e.g. web sites and email addresses in general literature).
- Digital text provides the capability for braille users to read the material in braille instantly, via refreshable braille.
- Braille is more widely available than ever before in history because of braille embossers, translation software, and refreshable braille.

However:

- Because of ambiguities in current codes, accurate translation of text into braille remains far from perfect.
- While technology enables braille users to type their material in braille and have it converted to print instantly, (backtranslation), the current code introduces many errors.
- Even the most basic mathematics material is not displayed correctly in braille generated by computers and mobile devices, and therefore the material is not reliable in this medium.

Need for Code Change

- Concern about braille complexity since CBC was introduced in late 1980s.
 - multiple braille symbols for same print symbol
 - increased contextuality of braille
- Increasing difficulty in constructing new code symbols to reflect changes in print.
- In 1991, Drs. Abraham Nemeth and Tim Cranmer presented a paper to BANA stating the urgent need to unify the various braille codes used in North America.

Unified English Braille

- UEB started as BANA research project; became international in early 1990s.
- UEB was developed primarily by braille readers in seven countries.
- ICEB endorsed UEB in 2004 as an official code.
- All ICEB members have now adopted it:
 - Australia, New Zealand, South Africa, Nigeria, Canada, United Kingdom, the United States, and Ireland
- BANA monitored adoption and implementation around the world for years before voting to adopt it in the United States.

General Characteristics of UEB






- UEB is a revision and extension of the current literary code; it includes new symbols for items not currently in EBAE. In that way, it unifies existing codes, except music.
- UEB eliminates some contractions from the current literary code to reduce ambiguity; it adds some symbols and changes a few others.
- In UEB, numbers are written in the upper part of the cell as they are currently in literary materials.
- UEB is designed to be extensible (easy to add new symbols as needed), consistent, and unambiguous. Because of this, UEB is more computable and better for backtranslation.

Some Features of UEB

- Other countries that have adopted UEB report that readers of current codes find UEB quite readable. Children who have been taught only UEB can read books in current code with little difficulty.
- See page regarding research into UEB on BANA web site.
- The next few slides highlight a few of the changes between current code and UEB.

Specific Changes: Contractions

UEB eliminates nine contractions: *ble*, *dd*, *com*, *ation*, *ally*, *to*, *into*, *by*, and *o'clock* because they created ambiguity in the code.

 deadmau5
 will.i.am
 SportsNation
 BrickYard
 CompanyN.com

Specific Changes: Spacing

UEB follows original text, so all symbols have spaces between them; this includes *and*, *for*, *of*, *the*, *with*. The words *to*, *into*, *by* are spelled out and spaced as they are in the original text.



He ran into him by the store with a box of the bubble makers.

Contractions: A few more examples

- Eliminated *by, into, to*

⠠ ⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠
To be or not to be.

- Eliminated *ble, com, dd, ation, ally*

⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠
Maddy served her haddock creation for the company at the Wimbledon party.

Specific Changes: Rules

To reduce exceptions and complexity in the contraction rules, contractions that stand for a group of letters will be used in some cases in which they are not used in current braille.

- More liberal use of contractions
 - more "syllable bridging"
 - generally permissible to alter the usual braille form
 - usually can bridge a diphthong
 - can be used in electronic addresses
 - more consistent rules for using contractions

Contractions

⠠⠠⠠⠠⠠⠠⠠	⠠⠠⠠⠠	
professor	edict	
⠠⠠⠠⠠	⠠⠠⠠⠠⠠	⠠⠠⠠⠠
reduce	mistaken	erases
⠠⠠⠠⠠⠠⠠	⠠⠠⠠⠠⠠ ⠠	⠠⠠⠠⠠⠠⠠
peaceable	freedom from boredom	
⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠	⠠⠠⠠⠠	
www.formulanine.org	aerial	

Specific Changes: New symbols

UEB uses new symbols for some punctuation such as ellipsis, dollar sign, bullet, percent sign, and dash. Most changes were made to eliminate ambiguity and so the marks didn't need specific spacing rules.

⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠ ... and more

⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠ \$100 for Ke\$ha

⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠ • 5%

⠠⠠⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠ What—oh, forget it.

Punctuation

- more "enclosures" in UEB (brackets and braces)

⠠⠠ ⠠⠠ () ⠠⠠ ⠠⠠ []

⠠⠠ ⠠⠠ { } ⠠⠠ ⠠⠠ < >

⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠ (if you will)

- Many common punctuation marks the same as in current code.
- Generally, follow print in their use. Use them in all contexts.

Specific Changes: Capitalization

- Dot 6 means the next letter is capitalized just as in current braille.

Pittsburgh, U.S.A.

⠠⠠⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠

- A double dot 6 means that the next word or string of letters is capitalized just as in current braille. However, the effect of the double capital is terminated by a space, a hyphen, an apostrophe, or other nonalphabetic symbol.

BUY the new album by A\$AP Rocky.

⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠

Typeforms

It is spelled brave.

It is too cold in this room!

I loved A Man Like Us.

Accents and other symbols

- Instead of just "dot 4" for everything, UEB has specific symbols for accent marks
 - tilde, accent acute, accent grave, umlaut, etc.
- Modified letters can't be part of contractions
fiancé blessèd
- New symbols not found in EBAE
 - Long dash, underscore, plus, minus, equals, and more!
- Generally follow print for their use.

Specific Changes: Numbers

UEB has all numbers in upper part of the cell. Mathematical symbols are included in code. There are new rules for familiar use of numbers, e.g., numeric indicators are repeated after a colon, dash, or hyphen.

Simple as 1 + 1 = 2.

It's 2:30 P.M.—time to go.

Why “upper numbers”?

- The committees had long discussions about which number system to choose for the unified code.
- Considered upper numbers, lower numbers, and “Antoine” (dot 6) numbers
- Each had pros and cons.
- A link to the archived discussion is still on the ICEB web site.

Rationale for Upper Cell Numbers

- Analysis of 16 textbooks, both technical and non-technical materials, for frequency of number/punctuation combinations compared to number/letter combinations.
 - a total of 8,429 pages of text, 4,556 pages of technical material that required the Nemeth code and 3,873 pages of other texts that did not require the Nemeth Code.
- Results found that “the punctuation indicator would be required 97.81 times more frequently than the letter indicator would be required in UEB.”





Bogart, D’Andrea, & Koenig. (2002).

Technical materials in UEB

- Basically follow the same symbols and rules for nontechnical materials
 - consistency of rules across contexts
 - follow spacing of print (mostly)
 - “stand alone” rule (when is it a contraction?)
 - grade 1 mode rules
- There is no “UEB Math Code”—it’s all ONE code.





Computer Notation & Electronic Addresses

- No special symbols to indicate beginning and ending computer notation
- Some contractions can be used but short forms and contractions that must stand alone are not used.
- Numeric indicator also starts grade 1 mode!

	
braille@aol.net	brl@aol.net
	
4yourchild.edu	4yourchild.edu





Grade 1 Indicators

- If a braille symbol also has a contracted meaning then the grade 1 indicator must be used unless grade 1 mode is already set or if there's no ambiguity when following UEB rules:

			
5g	5G	5m	5 m

Simple Fractions—and not fractions!

- The simple numeric fraction, such as ½, is just as we did in EBAE, as is the use of the slash mark for numbers shown horizontally (as per the 2007 update to EBAE). Again, this is used in any context.
- A mixed number uses a numeric indicator before the whole number and another before the simple numeric fraction.
- A slash is not a fraction!

	½ of a tsp
	2½
	1/4 /16
	Model 09/52

Two Important Rules!

- Stand alone rule: Section 2.6
 - "A letter or letters-sequence is considered to be 'standing alone' if it is preceded and followed by a space, a hyphen, or a dash." (Can be either a regular dash or long dash)
- Grade 1 Mode: Section 5.1
 - "A grade 1 indicator is used to set grade 1 mode when the grade 1 meaning of a symbol could be misread as a contraction meaning or a numeric meaning."
 - Some symbols have a "grade 1 meaning" and therefore need a grade 1 indicator.
 - Note: "Uncontracted braille is different from grade 1 mode." Section 2.5.2

Contractions

- Section 10 of the UEB Rulebook
- New names for categories
 1. Alphabetic wordsigns
 2. Strong wordsigns
 3. Strong contractions
 4. Strong groupsigns
 5. Lower wordsigns
 6. Lower groupsigns
 7. Initial-letter contractions
 8. Final-letter groupsigns
 9. Shortforms

Alphabetic wordsigns

- Pretty much the same rules we have now:
 - They stand for a word if they are standing alone
 - Use wordsigns followed by apostrophe and d, ll, re, s, t, ve (section 10.1.2)

⠠	⠠⠠⠠⠠
can	cans
⠠⠠⠠	⠠⠠⠠⠠⠠⠠
can't	more'n

Strong wordsigns

- So called because they have dots in both the top and bottom rows, and in both the right and left column on the cell
 - **child, shall, this, which, out, still**
- Use them when they are standing alone
- Use them when followed by an apostrophe and *d, ll, re, s, t, ve*

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

Which'll it be?

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

this'n that

Strong contractions

- Use them wherever the letters they represent occur (unless other rules limit its use).
- Can be used as wordsigns and as groupsigns
 - **and, for, of, the, with**
- Do not use them if they are formed where two words come together in a compound word (just as now).

⠠⠠⠠⠠⠠⠠⠠

tofu

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

Vandyke

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

twofold

Strong groupsigns

- Use as parts of words where they occur (unless other rules limit their use).
- This means they can often bridge prefixes and the rootword.
 - This is quite similar to the rules that have been used in British braille for decades and ...
 - EBAE use of the "ar" contraction in words like "arise" and "around."
- **ch, gh, sh, th, wh, ed, er, ou, ow, st, ing, ar**
- Same rule for "ing" as in EBAE—can't start a word.
- Aspirated h rule: mishandle, knighthood
- If *ch, sh, th, wh, ou, or st* can be misread as a strong groupsign, braille it out:

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

St. Stephen

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

Sh!



⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠



ch-ch-chill

Initial-letter contractions, cont.

- *Had* can only be used in words with short /a/ sound



 Hadley Hades

- *Ever* can only be used when stress is on first "e" and when not preceded by e or i:



 fever revere

- *Here* and *name* are used when the letters are pronounced in one syllable:





 cohere coherence rename enamel

Initial-letter contractions, cont.

- *One* can be used if the letters are pronounced in one syllable EXCEPT for "oney" and derivatives of "honest" & "monetary."
- *Some* can be used if the letters form a syllable of the basic word.
- *Time* can be used when the letters are pronounced the same as the word "time."
- *Under* can be used unless preceded by "a" or "o" or if the "un" is a prefix.





 stoney somersault centimeter flounder

Final-letter groupsigns

- Used in the middle or end of words as we do now.
- Preceded by dots 4-6 or dots 5-6
- Use them where you see them with familiar exceptions:
 - *ity* can't be used in *fruity* and *biscuity* (and similar)
 - *ness* can't be used when "ess" added to a word that ends in "en" and "in"




 rabbit citizeness inessential

Shortforms Made Simple

- We have retired the shortform "o'clock."
- Can use all 75 shortforms as wordsigns when they stand alone, even for proper names.
- Can you use a shortform in a longer word? Easy!
 - Step 1: You can add s or apostrophe s to all except "about," "almost" and "him" (abs, alms, hms)
 - Step 2: Look on the Shortforms List (appendix 1). If it's there, you can use it. The end.
 - Step 3: If it's not on the shortforms list, look at rule 10.9.2
 - braille & great = use wherever
 - children = can't be followed by vowel or y
 - blind, first, friend, good, letter, little, quick = begin a word not followed by vowel or y

Whaddaya think?

heredity	eversion	ethereal
subbasement	BeLinda	re-connect
altimeter	underived	baroness

Howdja do?

heredity	eversion	ethereal
⠠⠏⠑⠗⠑⠑⠗⠑	⠠⠑⠑⠗⠑⠑⠗⠑	⠠⠑⠞⠑⠗⠑⠠⠑
subbasement	BeLinda	re-connect
⠠⠑⠑⠑⠑⠑⠑⠠⠑⠑⠑⠑⠑⠑	⠠⠑⠠⠑⠠⠑⠠⠑⠠⠑	⠠⠑⠠⠑⠠⠑⠠⠑⠠⠑
altimeter	underived	baroness
⠠⠑⠠⠑⠠⠑⠠⠑⠠⠑	⠠⠑⠠⠑⠠⠑⠠⠑	⠠⠑⠠⠑⠠⠑⠠⠑

Preference rules: Section 10.10

- First: preference to group sign that uses fewer cells
- Then: Preference to strong contractions that don't waste space.
- Use *be, con, dis* in preference as long as it's the 1st syllable
- Otherwise, use strong group signs in preference to lower signs
- Use "ence" when the words end in "a" or "d" or "r"
- Otherwise, use strong group signs OR lower group signs in preference to initial-letter contractions. Ex: phone, phoned
- Select group signs that more nearly approximate usual pronunciation or does not distort the word.
- Select group signs that don't hide the word!
- Don't forget your lower sign rule!

You try!

- | | | | |
|-----------------|------|-------|---------|
| 1. apartheid: | th | the | part |
| 2. beautiful | ea | be | neither |
| 3. saccharine | cc | ch | neither |
| 4. experienced | en | ed | ence |
| 5. toner | one | er | neither |
| 6. gingham | in | gh | ing |
| 7. chemotherapy | th | the | mother |
| 8. component | com | one | en |
| 9. bedraggled | ed | be | neither |
| 10. wherever | ever | where | er |

You try!

- | | | | | |
|-----------------|-------------|------------|-------------|---------|
| 1. apartheid: | th | the | <u>part</u> | 10.10.8 |
| 2. beautiful | <u>ea</u> | be | neither | 10.10.4 |
| 3. saccharine | cc | <u>ch</u> | neither | 10.10.5 |
| 4. experienced | en | ed | <u>ence</u> | 10.10.6 |
| 5. toner | one | <u>er</u> | neither | 10.10.7 |
| 6. gingham | in | gh | <u>ing</u> | 10.10.8 |
| 7. chemotherapy | th | <u>the</u> | mother | 10.10.9 |
| 8. component | com | one | <u>en</u> | 10.10.7 |
| 9. bedraggled | ed | <u>be</u> | neither | 10.10.4 |
| 10. wherever | <u>ever</u> | where | er | 10.10.8 |

Mention? Use?

- Section 3.13 Dot Locator for Mention
 - To set apart a symbol under discussion
 - special symbols page
 - transcriber's note
 - So the symbol doesn't affect what follows (just "mentioning" it)

⠄⠄⠄⠄⠄ capitalized passage symbol

- Section 3.14 Dot Locator for Use
 - To assure that a symbol taken out of context can be read
 - a table of punctuation marks
 - In a grid of letters to show they are not alphabetic wordsigns
 - word search type activity
 - So the symbol DOES have its affect on what follows ("using" it)

Resources and Support

- *UEB Rulebook* and a number of training materials are available on the BANA web site.
 - <http://www.brailleauthority.org/ueb.html>
- Example documents in UEB on the BANA site.
- Links to training courses for practitioners who know EBAE:
 - Hadley
 - CNIB course
 - Manuals from Australia & New Zealand
