

25-Jan-21
ASB BPR 060, Guidelines for Barrel and Overall Length Measurements of Firearms

#	Section	Type of Comment (E-Editorial, T-Technical)	Comments	Proposed Resolution	Final Resolution
1	4.2.4	E	Comma needed before "when".	insert necessary comma	Reject: This sentence reads appropriately as is.
20	4.2.4	T	An important reference is missing	Change references [11,12] to [11,12,17].	Accept
2	4.3.1.3	E	"...consideration should be taken to determine how the starting point can be accurately achieved" is still incorrect.	"...consideration should be given to the accurate determination of the starting point."	Reject: This sentence reads appropriately as is. It is explained further in this paragraph.
3	4.3.2.1	E	"When measuring the barrel of a firearm that has an integral chamber, the distance parallel to the bore axis from the breech face (with the action closed) to the forwardmost point of the muzzle represents the length of a barrel." is still hard to follow.	"When measuring the barrel of a firearm that has an integral chamber, the length is defined as the distance from the breech face (with the action closed) to the forwardmost point of the muzzle, measured parallel to the bore axis." -or- "Measured parallel to the axis of the bore, the distance from the breech face (with the action closed) to the forwardmost point of the muzzle represents the length of the barrel in a firearm with an integral chamber." -or- "Measured parallel to the axis of the bore, the distance from the breech face (with the action closed) to the forwardmost point of the muzzle represents the length of the barrel." (letting the section heading serve to notify that this applies to guns with an integral chamber).	Accept: First option replaced the original paragraph. This is not a significant technical edit as the sentence is rearranged for clarity.
4	4.3.2.2	E	"...may make it difficult to determine the location of the breechface for alignment of the exterior measurement device." is slightly awkward.	"...may make it difficult to determine the location of the breechface while aligning an exterior measurement device."	Reject: The suggestion will change the intended meaning of this section.
5	4.3.2.10 (this should be 4.5.10)	E	Still ambiguous as to whether all BL/OL casework measurements from here on out require two replications, or if this is some kind of a one-time QC check on the uncertainty data. I'm guessing it's the former.	Once uncertainties for BL-OL measurements are established, all subsequent BL/OL measurements in casework should include at least two replications of the measurement.	Reject: The 1st sentence in this paragraph is clear as written.
6	4.3.2.10 (this should be 4.5.10)	T	What happens if the measurements are farther apart than the uncertainty? Start over completely? Discard the outlier and do an additional replication to replace it?	"If the difference between the measurements is outside the assessed uncertainty, outlying measurements can be discarded and replaced with additional replications, or the set of replications can be entirely redone, until a set of measurements is obtained that falls within the assessed uncertainty."	Accept with modification: section 4.5.10.1 and 4.5.10.2 were added in response to this recommendation.
	4.5.10			Clause 4.5.10 was changed to indicate that the mean value of the measurement should be reported.	Accept
7	A.1	E	Just a reminder to add the URL before publication.	Add URL.	Accept: This will be added when this document goes for publication.
8	A.1	E	Series punctuation. Add comma, remove "and".	"...data (Sheet 1) and calculations..." to "...data (Sheet 1), calculations..."	Accept with modification: The 1st sentence was updated for clarity.
9	A.1	E	Remove minor ambiguity that might make it sound like these are the components to be used in the reader's study.	"...component estimates for a laboratory study..." to "...component estimates from a laboratory study..."	Accept with modification: "from a simulated" was added to clarify this sentence.
10	A.1	T	"The spreadsheet was adapted with one minor correction from..." I assume some will be curious to know if the correction was mathematical in nature, or what.	Describe nature of correction.	Reject with modification: The sentence was updated to say this is an example only and removed the reference to "minor correction".
11	A.1	E	Parenthetical clause needs commas.	"... was adapted, with one minor correction, from a previously developed..."	Reject with modification: The sentence was reworded and "minor correction" was removed.

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21	Annex section A.1, line 1	T	The URL to the Excel Spreadsheet needs to be added on line 1 of section A.1	Add the URL in this place when it has been determined where the Excel sheet will be stored.	Accept: This will be added when this document goes for publication.
24	Figure A.1 caption	E	Provide a reference for the illustration.	Add the phrase "(adapted from Ref. 17) " to the caption.	Accept
25	Figure A.2 caption	E	Provide a reference for the illustration.	Add the phrase "(adapted from Ref. 17) " to the caption.	Accept
26	Table A.1 Header	T	In the most recent version, explanatory text has been left off the header of Table A.1. Also the header date should be updated.	Change "(Updated November 4, 2019)" to "(Updated August 19, 2020). The spreadsheet begins on Sheet 1 with simulated data involving 80 measurements each for barrel length and overall length, shown in columns D and E. The 80 measurements include five observers taking four measurements each on four firearms. The calculations here yield a mean value for the overall length and barrel length of each firearm and a Type A standard uncertainty (Stdev) calculated from 80 measurements by all observers. The four values of standard uncertainty are pooled to yield a value of statistical reproducibility for OL and BL measurements, shown in yellow. These values are carried onto Sheets 2 and 3, respectively, as one component of a summary uncertainty budget tabulated in a format originally described by ASCLD/LAB."	Accept with modification: Table A.1 header was updated and the second paragraph was added to A.1.
12	A.3	T	Does the correction have a name so I can look it up? Or, is there some kind of reference that describes it in more detail? I'd be at a loss if I had to describe how this was working from the information present here.	Add a reference or something?	Reject with modification: The correction factor was from a statistician on the OSAC task group. The correction yields a conservative upper limit for the sample standard deviation. For the example data, it only amounts to a 9 % increase in the standard deviation. Because this modest refinement is likely to cause confusion among users, it has been removed from the spreadsheet and discussion of it has been removed from the BPR.
	A3			The word, "length", is redundant in Clause A.3 and was removed.	Accept
	A5			-"Confidence level" was changed to "level of confidence" in Clause A.5	Accept
22	Annex section A.6, "Alignment Errors," Header	E	There are two sections numbered "A.6".	Renumber this header as A.7	Accept
14	A.6 (A.7)	T	From the information presented here, I am at a loss in puzzling out how this A1 misalignment equation was derived. Is it even relevant when it is typically covered in the uncertainty analysis?	Explain this more, or explain it less.	Reject with modification: A two sentence rationale for this section was added as an introduction. Error found in the first equation was corrected. "sin" changed to "tan" in Equation. A.1. $\tan \alpha$ is approximately equal to α for small angles α

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15	A.6 (A.7)	T	For some measurement setups, the misalignment angle is the same for every measurement. What sort? I am at a loss to conceive such a setup that is relevant to this application.	Please describe such a setup.	Accept with modification: A phrase, "fixturing may be such that the" was added to clarify.
16	A.6 (A.7)	E	"Barrel centerline" and "Bore centerline" used.	Replace with "bore axis" for consistency.	Accept
17	A.6 (A.7)	T	Also hard to see how the last two equations were derived. I did understand the one error being negative and the errors being very small when the firearm isn't absurdly misaligned, but I'd already figured that out previously. The rest was pretty opaque.	Explain this more, or explain it less.	Accept: Text was added in several places to clarify.
13	A.6 (2 nd instance)	E	Both "Thermal Expansion" and "Alignment Errors" are A.6	Change "Alignment Errors" to A.7	Accept
23	Annex section A.6, now A.7, line 2	E	Adding the symbol α (alpha) for angle would improve clarity.	Change "angle," to "angle α ,".	Accept
18	Annex	E	I'm not dead set against it. But, since I'm concerned that the new annex following were the parts I've already learned elsewhere or previously worked out for myself.		Reject with modification: This annex is intended to provide useful working examples and is not intended to be construed as the only valid approach to calculating uncertainty. A Note was added to the beginning of Annex A to clarify.
19	From CB Ballot		I'm not dead set against it. But, since I'm concerned that the new annex material potentially raises an expectation of examiners being able to conduct an unnecessarily complex discussion about misalignment errors without giving them adequate tools to do so, and my vote doesn't matter anyway, I vote "no."		Reject with modification: This annex is intended to provide useful working examples and is not intended to be construed as the only valid approach to calculating uncertainty. A Note was added to the beginning of Annex A to clarify.