

Comments on NCFS Views Document: “Scientific Literature in Support of Forensic Science and Practice”

By: AFTE Board of Directors¹ and Editorial Committee²

Keywords: AFTE Journal, AFTE Newsletter, National Commission on Forensic Science, NAS, NCFS, scientific literature, SCOPUS, SWGGUN

Editor’s Note: The National Commission on Forensic Science (NCFS) posted six (6) draft views documents for public review and comment on the Commission’s website in October of 2014. These documents offered proposed policies and positions regarding various aspects of forensic science and practice. One of these documents was entitled “Scientific Literature in Support of Forensic Science and Practice” and detailed six (6) NCFS criteria for foundational, scientific literature supportive of forensic practice. Following the public comment period, this document was voted on and adopted as a final work product, virtually unchanged, by the NCFS Scientific Inquiry and Research Subcommittee, on January 30, 2015. Due to this document’s potentially far-reaching influence regarding the perceived propriety and academic soundness of the AFTE Journal and articles published therein, the AFTE Board of Directors and Editorial Committee decided to issue a response. To that end, the following response was posted by AFTE President Katherine Richert on the NCFS website on November 19, 2014, during the public comment period.

The Board of Directors and Editorial Committee of the Association of Firearm and Tool Mark Examiners (AFTE) have chosen to respond to the National Commission on Forensic Science (NCFS) Views Document entitled “Scientific Literature in Support of Forensic Science and Practice” because the Association, in conjunction with the Scientific Working Group for Firearms and Toolmarks (SWGGUN), is one of the forensic groups that provided a literature compendium to the Subcommittee on Forensic Science’s RDT&E IWG. AFTE provided this 94-page compendium, dated June 14, 2011, because in AFTE’s opinion, the 2009 National Academy of Sciences (NAS) report only provided a very limited, cursory review of the scientific literature supporting firearm and toolmark identification. By the Academy’s own admission, on page 7 of their report, they state:

The committee decided early in its work that it would not be feasible to develop a detailed evaluation of each discipline in terms of its scientific underpinning, level of development, and ability to provide evidence to address the major types of questions raised in criminal prosecutions and civil litigation. However, the committee solicited testimony on a broad range of forensic science disciplines and sought to identify issues relevant across definable classes of disciplines. As a result of listening to this testimony and reviewing related written materials, the committee found substantial evidence indicating that the level of scientific development and evaluation varies substantially among the forensic science disciplines.

And now, the NCFS states that they too have only done a “cursory review of the literature citations” and that this

review “raised concerns within the NCFS that extend beyond these specific bibliographies”. The NCFS then concludes this document by saying that “...foundational, scientific literature supportive of forensic practice should meet [six] criteria...”, which are then described.

Many of the references listed in the AFTE/SWGGUN literature compendium were published in the AFTE Journal. It now appears that the degree of credibility that will be assigned to these references by the Commission (or whatever person or body will ultimately judge them) rests largely on an evaluation of the AFTE Journal relative to the six criteria for foundational scientific literature listed in the NCFS Views Document. To address any concerns that the AFTE Journal falls short of these benchmarks, an assessment of how the Journal meets each listed criterion is included below. But first, a brief description of the evolution of AFTE and the AFTE Journal is in order.

AFTE was formed in 1969 by a group of firearm and toolmark examiners, a number of whom were members of the American Academy of Forensic Sciences (AAFS), who felt that the variety of subject matter that needed to be covered in the area of forensic firearm and toolmark examination by both the Journal of Forensic Sciences and by the AAFS at their annual seminars exceeded the bounds of either of those forums. In other words, the broad scope of the AAFS did not permit the depth of coverage on subjects related to firearm and toolmark

¹Katherine Richert (President), Lannie Emanuel, Wendy Gibson, Brandon Giroux, Mark Keisler, Melissa Oberg, Alison Quereau, Andy Smith, and Travis Spinder

²Cole Goater (Editor), Robert Caunt, Eric Collins, Michael Haag, and William Matty

examination that the field was beginning to require. The new Association of Firearm and Tool Mark Examiners, over a period of four years, published a series of 20 newsletters, from May 1969 (#1) to June, 1972 (#20). In August 1972, with membership in the Association totaling over 200, the name of the "AFTE Newsletter" was changed to the "AFTE Journal", "in keeping with the professional information contained herein".

The quarterly AFTE Journal has been published continuously since August 1972. From its beginning as a newsletter through June 1988, a single AFTE member was designated as Editor. This person was usually aided by clerical staff from their laboratory and by other colleagues (usually also AFTE members) to peer review submitted articles as needed.

In June 1988, an amendment to the AFTE By-laws was made that called for the creation of an Editorial Committee composed of an Editor, three Assistant Editors (a recent By-laws change in 2013 created a fourth position), and 12 regular committee members comprising the Editorial Review Panel. The Editorial Committee published "Instructions to Authors" that described the desired format of submitted material. This description was similar to that given to members in the first issue of the AFTE Newsletter.

Three new documents were implemented in the Fall 1997 issue of the AFTE Journal to strengthen the pre-publication review process. These were: 1) an Authors' Publication Checklist, 2) a Manuscript Review Form, and 3) How to Write and Submit an AFTE Manuscript. The intent of these documents was to help provide an efficient and quality-driven system for the review and publication of submitted manuscripts.

Beginning with the Summer 2003 issue of the AFTE Journal, all news related to Association business, announcements, etc. was removed from the Journal and placed into a separate publication titled, "AFTE News – A Supplement of the AFTE Journal". This was done in order to focus the AFTE Journal on the scientific contributions published by the Association.

As alluded to previously, the following is an evaluation of the AFTE Journal as it relates to the six NCFS criteria for foundational scientific literature listed in the NCFS Views Document:

Criterion #1

- *Peer-reviewed in the form of original research, substantive reviews of the original research, clinical trial reports, or reports of consensus development conferences.*

The AFTE Journal offers original research and occasionally reviews of such research. The rest are not applicable or currently available in the field of forensic firearm and toolmark examination and identification.

Criterion #2

- *Published in a journal or book that has an International Standard Number (ISSN for journals; ISBN for books) and recognized expert(s) as authors (for books) or on its Editorial Board (for journals).*

The AFTE Journal ISSN is 1048-9959. The AFTE Journal's Editorial Committee includes such experts.

Criterion #3

- *Published in a journal that maintains a clear and publicly available statement of purpose that encourages ethical conduct such as disclosure of potential conflicts of interest integral to the peer review process*

From the publicly-accessible AFTE website (<http://www.afte.org/Journal/AFTEJournal.htm>):

The AFTE Journal is the official publication of the Association of Firearm and Tool Mark Examiners. The AFTE Journal is dedicated to the sharing of information, techniques and procedures. It is the editor's goal that this sharing of information results in the criminal justice system having the most accurate and complete information available...All papers published in The AFTE Journal are reviewed for scientific validity, logical reasoning, and sound methodology, where applicable. The Editor, Assistant Editors, and the Editorial Review Panel conduct a detailed review of all papers prior to publication. Papers in which the author engages in experimentation or testing from which conclusions are drawn, or those that present an opinion, technique, or method having scientific significance are all subject to post-publication review by the members of the Association of Firearm & Tool Mark Examiners. The 'AFTE Peer Review and Letters to the Editor' section of the Journal provides a forum for post-publication review.

Although the Journal has not yet adopted an expressly-stated conflict-of-interest policy, research conducted in this field is usually not tied to individuals or private companies who may have a profit motive, as it may be in other fields of study such as medical or pharmaceutical research. The multi-layered AFTE peer review process is designed to minimize any such potential conflicts of interest.

Criterion #4

- *Published in a journal that utilizes rigorous peer review with independent external reviewers to validate the accuracy in its publications and their overall consistency with scientific norms of practice.*

An overview of the AFTE Journal peer review process can be found on the AFTE website at: <http://www.afte.org/Journal/PeerReviewProcess.htm>. While it is unclear what the NCFCS considers “rigorous” and “independent”, all submissions to the AFTE Journal undergo a thorough two-stage review process conducted by subject matter experts who are members of the AFTE Editorial Committee. Occasionally, a reviewer may need to enlist the knowledge of an expert outside of the field to complete a review; however, it would be extremely difficult to use only external reviewers because most qualified potential reviewers also tend to be AFTE members. Research manuscripts submitted to the AFTE Journal are independently reviewed by at least two reviewers from the Editorial Committee for content (technical information, scientific reasoning, scientific soundness of opinions and conclusions, references), clarity, grammar, typographical errors, and adherence to AFTE Journal formatting guidelines.

Criteria #5 & 6

- *Published in a journal that is searchable using free, publicly available search engines (e.g. PubMed, Google Scholar, National Criminal Justice Reference Service) that search major databases of scientific literature (e.g. Medline, National Criminal Justice Reference Service Abstracts Database, and Xplore).*
- *Published in a journal that is indexed in databases that are available through academic libraries and other services (e.g. JSTOR, Web of Science, Academic Search Complete, and SciFinder Scholar).*

The AFTE Journal is currently indexed in Scopus, which,

according to its website (<http://www.elsevier.com/online-tools/scopus>), “is the largest abstract and citation database of peer-reviewed literature: scientific journals, books and conference proceedings”. The Content Selection & Advisory Board of Scopus informed AFTE that the AFTE Journal was accepted because “it publishes excellent content relevant to its field, maintains a convincing editorial policy, and has sustained a consistent publication schedule.” Although the AFTE Journal’s inclusion in Scopus currently only starts with 2013 material, the AFTE Editor is working to see if the entire back catalog of Newsletter and Journal issues can be included as well. In addition, all AFTE Newsletter and Journal issues are searchable using a free, publicly available search engine found on the AFTE website (<http://www.afte.org/Journal/jsearch.html>). Individual issues of the AFTE Newsletter and Journal are available from the AFTE website for a fee. Individual articles are not currently available for purchase from the AFTE website.

Conclusion

AFTE had hoped that the Subcommittee on Forensic Science’s RDT&E IWG would be able to follow through with having some qualified person(s) evaluate the propriety of the 94-page list of underpinning references that AFTE, in good faith, submitted to them. But, the IWG was not able to do this before its charter ended. AFTE remains hopeful that their references will be evaluated fairly, and feels that if this evaluation is done by persons having knowledge of firearm and toolmark identification, they will find that this forensic specialty rests on a solid foundation.

[Editor’s Note: Since the submission of this response to the NCFCS, AFTE has learned that such a review is being undertaken by the American Association for the Advancement of Science (AAAS). Refer to AFTE President Katherine Richert’s “President’s Message” in the April 2015 issue of the AFTE News (Vol. 13, Issue 1, pp. 2-3).]