

8 October 2007

Personal Statement by FS McClemont Regarding the Case of Michael John Smith, Who Was Convicted of Espionage in 1993.

1) This Statement

My reason for making this statement is as follows:-

In March 2006 I became aware (via a search for my name on Google) that Mike Smith had named me on a website as a possible witness in relation to his campaign to prove that he had been wrongfully convicted of espionage in 1993. At that time, although I had not studied any details of his case, I did not think that I had any information that was relevant to it, either for or against.

In August 2007, soon after being copied an e-mail from him to Dr DV McCaughan, I became aware that Mike Smith was attempting to contact me, both by e-mail and by telephone (Dr McCaughan was a senior manager at the Hirst Research Centre (HRC) in Wembley, where Mike Smith and I had both worked). I do not know how he got my contact details. Although I doubted that I could add anything of value to the evidence either way, and in order to try and satisfy Mike Smith that this was the case, hoping thereby to prevent any further unsolicited attempts by him to contact me, I agreed to make this statement in my personal capacity on the condition that Mike Smith:

1. Does not contact me, or anyone else at my current employer (whether in a work or personal capacity),
2. Does not include, or refer to, this statement on his website or in any other way,
3. Removes all references to my current employer, or its employees, from his website and any other materials.

In making this statement I am simply trying to bring any information which I have and which is relevant to Mike Smith's case to light, regardless of whether it helps or impedes him. In order to facilitate this process I have made some additional comments against a document entitled "Comments on Appendix A, Arguments Against the Evidence of Dr Meirion Francis Lewis", which was written by Mike Smith for submission to the CCRB and which had been sent by him to Dr McCaughan. I found it a useful document to use as a basis for adding my opinion about the possible sensitivity of some of the material that Mike Smith had removed from HRC.

2) Some Background

I joined the GEC Hirst Research Centre in Wembley as a graduate in January 1975, starting in the Microwave Delay Line Department managed by Dr DG Scotter. Initially I worked for David Brown on the small-scale manufacture and testing of microwave delay lines for an identified military application. During my first year or two at Hirst, my delay line work was transferred, initially to the Quartz Crystal Group managed by John Birch, and later to a silicon IC process group run by GD Willey. This was all still under the management of Dr Scotter.

In about 1978, after a re-organisation, I was transferred to the Device Applications Laboratory under Arthur Dyer, who in turn reported to Eileen Read/Denis Scotter. I now started work on SAW filters, initially the production and testing of two different development units for an identified military application, and then the re-development and medium volume production of those filters. The emphasis of my work was now changing from its original manufacturing-oriented nature to one of design and development, in particular the development of SAW filters for military (ie MoD) applications. Projects included:-

- i) New filters for several identified military applications, eg MSDS, Stanmore (1978 – 1981). MSDS, Stanmore (1982 – 1985) and MSDS, Frimley (1982 – 1986).

FS McClemont
11/10/07

- ii) The research/development of low loss SAW filter designs under MoD-funded "DCVD" research and development programmes.
- iii) The transfer of SAW technology to MEDL, the new GEC "Product Unit" in Lincoln, (~1980 to ~1990).

I worked for Arthur Dyer in the Device Applications Laboratory until his retirement in 1994, which more or less coincided with the move of HRC to a new site in Borehamwood. By this stage SAW filters had become a very low key activity in the group, and most of my work was concerned with high precision quartz crystal oscillators for defence and space applications. This has remained the case since the transfer of the group in which I was then working to my present employer and site.

3) Some Key Dates

1982 – the "Demonstrator" SAW filter design was carried out in the Device Applications Laboratory by Dr Chris Emin under the supervision of Dr Robert Peach. This would have been to the RESTRICTED document ref. 79481/PBH/BB/SO8, as this appears to be the only document describing the requirement at that time (issued January 1982). The designs that evolved were designated DEM122, DEM123 or DEM125. I believe that the filter was generally known to those in the Device Applications Laboratory who were associated with its design, as being for the ALARM missile. This would probably not have been through any document, but by mention at meetings with the immediate customer (representatives of MSDS). Also I am not sure exactly when in the evolution of the filter design that this would have become known. The general purpose of this missile would also have been understood at HRC (the name is an acronym describing its function). It was generally understood in the Device Applications Laboratory that, from a security point of view, for programmes requiring RESTRICTED documents, the applications and eg SAW filter frequencies should never be mentioned or recorded together, eg in reports and memo's; the mention or recording of either in isolation of the other was generally thought to be acceptable.

My association with the development of the filter, and its transfer to MEDL for higher volume manufacture, continued from 1982 until 1985. The filter was in low volume production at Wembley in 1984 and 1985 (30-off A-Models and 40-off B-Models) to ANOTHER specification, which post-dates the RESTRICTED specification and was NOT classified. This was MSDS document ref. 1011-00435 Issue 1, dated 27th March 1984. After this the filters were manufactured at MEDL, but I cannot confirm to what spec. I would have been aware at about this time that MEDL were offering commercially-available filters with the same performance as those they were making for MSDS (these being identified at some point by MEDL as Type DW9210 in their brochure).

At some time between the design of the filter in 1982 and 1984, it was selected as a test vehicle for HRC's BS9450 Capability Approval Programme for SAW Filters. It was intended that the achievement of this quality standard would encourage users of SAW filters to procure devices from Hirst (notwithstanding the attractiveness of receiving funding from the BS organisation for the exercise itself). The filter was identified as CQC5 under the Hirst programme. A number of other Hirst SAW filters had already been, or were being, or were planned to be, qualified under this scheme, ie CQC1 – CQC4 had already been designated.

Each "CQC" covered a different region of the SAW filter technology "envelope"; CQC5 was of interest as a medium bandwidth UHF filter using lithium niobate as the SAW substrate material.

A number of CQC5/DEM125 filters were tested under this programme and the results were reported in eg Reference 1 (1984). The QA representative for at least part of this work, if not all of it, was Mr DT Lewis. It is my presumption that, as part of Mr Lewis's involvement in the preparation of BS9450 documentation and qualification testing of the CQC5 filter, I lent him my copy of the RESTRICTED MSDS Specification for the Demonstrator SAW filter.

John Clement
11/10/07

4) My Acquaintance With Mike Smith

I note from a document in his weblog that Mike Smith joined GEC/HRC as part of the QA Dept. in December 1985. I recall that he worked with some members of the Device Applications Laboratory on the auditing of eg process documentation and software. I don't recall working directly or formally with him on SAW filters (or any other programmes for that matter), however I cannot be certain of this. Notwithstanding this, during his more general interaction with our Group, I found him to be a pleasant person and discovered that we had a strong mutual interest in hi-tech music equipment, and particularly in guitars. These topics formed the basis of many friendly conversations between us over the period of his employment at Hirst and up to the time of his arrest.

On 8/8/1992 Mike Smith was arrested. On this day, or possibly the day after, I reported at work at Hirst and was immediately advised by Arthur Dyer to report (with him) to the Director (Dr SL Cundy). Dr Cundy explained the events surrounding Mike Smith's arrest and asked me if I knew how a RESTRICTED document bearing my name could have been found in Mr Smith's possession. I do not recall whether Dr Cundy identified the document. I am not sure whether I said I did not know how this could have occurred, or whether I suggested, even at that stage, that it must be the spec for the MSDS filter and that it must have made its way to Mr Smith via Mr Lewis's desk, but it would have been one or the other. There was no follow-up to this short interview - this was essentially the total extent of my formal involvement in the case.

My reaction to the events that followed was the same as that of my colleagues, ie one of amazement and disbelief. I did wonder about whether I would be called as a witness, I will admit that the potential responsibility of this was a worry to me, and that I was grateful when it did not transpire to be the case. At that time (*and through the trial and beyond*), I assumed that I was a very small pawn in the proceedings, that they went miles over my head, and that the law would take (*and later had taken*) its proper course.

On 18/11/1993 Mike Smith was convicted of espionage.

5) Questions from Mike Smith

"Can you please shed some light on the history of that 'restricted' document"

After viewing the RESTRICTED specification on the Cryptome website, I see that it was dated January 1982, so it must have been used for the initial design phase of the SAW filter. The A and B-Model filters, which were made at Hirst in 1984/1985, were made to an unclassified spec, ref. 1011-00435 Issue 1, dated 27th March 1984.

I would have treated the document in accordance with the requirements for that classification, ie my understanding would have been to keep it under lock and key when not in use. I believe I must have lent it to Mr Dewi Lewis with a view to helping him with the documentation for, and planning of, a BS9450 Capability Approval Exercise for SAW filters using DEM125/CQC5 filters as the qualifying vehicle (for medium bandwidth UHF filters using lithium niobate as the substrate material) – see Reference 1.

Clearly a specification was required by Hirst in order to allow the design of the SAW filter. Clearly I had cause to hold specifications for these filters, even if classified. I never had any cause to question the correctness or otherwise of the classification of these documents, or whether the information contained in them was more or less sensitive than was indicated by their marking. I took it on trust that the classification that had been determined elsewhere, ie by the originators, was correct. I treated them accordingly, and in accordance with my treatment of specifications for other programmes.

"Why was I not interviewed?"

I don't really understand how I could be expected to answer this question, it is surely one for the relevant authorities. It is understandable that I should have been asked about how the

John C. Clement
11/10/07

RESTRICTED document might have found its way from me to Mike Smith, but as I have said, this line of enquiry WAS addressed (by Dr Cundy). Beyond that I did not find it strange that I was not interviewed as I did not feel I had any knowledge that was relevant to Mike Smith's case.

I cannot comment expertly on the likely usefulness of the contents of the RESTRICTED specification to a potential enemy. I am not an expert in RF electronics, or the design or operation of radar or homing systems, or how they might be jammed. I would assume that the SAW filter frequency and bandwidth could be key parameters of a radar system, I know the SAW filter is used in the filtering of the "IF" prior to signal processing. However the SAW filter parameters are not directly related to the carrier frequency, which it seems to me would be the most sensitive information in respect of the possibility of jamming. That is not to exclude the possibility that the filter parameters are sensitive, I really do not know. I would have thought that in isolation they are not. I would expect it to some extent to be a question of whether they could be linked to an identified system.

SAW filters are small components embedded in larger, more complex equipments and systems. All SAW filter designs commissioned at HRC would tend to be carried out without any need for reference to the design or operation of the parent systems; all the necessary information would be in the specification. The personnel of the Device Applications Laboratory were not the systems designers, and did not need to know details of the parent equipment or system other than what was in the specification.

I would suggest that the authors of the RESTRICTED document, or other recipients on the circulation list, would have been far better qualified than me to comment on the usefulness or otherwise of its contents to an enemy, ie employees or former employees of MSDS, Stanmore.

"Nobody on the circulation list of the document (16 people) was ever interviewed about what it related to?"

I do not know. I do not think that any of the Hirst recipients were interviewed, but I am not sure. I would have thought that the authors and the numerous nominated MSDS personnel on the spec would be far better qualified than anyone at Hirst to confirm its purpose, sensitivity etc.

6) Dr MF Lewis

I believe Mike Smith is hoping to discredit the evidence given by Dr MF Lewis, an expert witness for the prosecution at his trial. I do not know Meirion Lewis personally, although I did meet him professionally on a couple of occasions, either at DCVD Liaison Days (where industry presented the results of MoD-funded R & D programmes), or during occasional visits I made to RSRE with Arthur Dyer. I know that he was one of the world's most pre-eminent scientists in the physics and design of SAW and other electro-acoustic devices. As I have already indicated, I am not an expert in the design of RF systems or "electronic warfare", hence I am not well-qualified to comment on the quality or correctness of Dr Lewis's evidence at Mike Smith's trial which relates to these aspects. However in order to be as open as possible I have made a few comments on Mike Smith's analysis of the testimony of Dr Lewis where I do feel qualified – see Reference 2 below.

Reference 1 - HRC Report 16,822C, Report on Maintenance of Capability Approval of SAW Devices, DT Lewis, July 1984

Reference 2 - Some Comments on Mike Smith's Analysis of the Testimony of Meirion Lewis

for comment
11/10/07

Comments on Appendix A, "Arguments Against the Evidence of Dr MF Lewis"**1 Qualifications and experience**

No comment.

2 Dr Lewis was a biased witness**2.2.1 Radiation Hard Quartz**

The existence of HPQ (which is still in production and exclusive use by my present company), and its properties, are not classified information, and to my knowledge would not have been in the 1980's and 1990's, as witnessed by the existence of a Techbrief. However the technology to produce the material would have been, and still is, commercially sensitive.

2.2.2 Dow Corning adhesive used to mount SAW substrates

The selection of Dow Corning 738 RTV as the substrate mounting adhesive for SAW filters manufactured at Hirst was on the basis that it was a material which remained mechanically compliant over a full military operating temperature range, including low temperatures. The importance of low outgassing for the SAW substrate mounting material could not be excluded, although I would not think that this was critical for bandpass filters, where the Q is very low and small frequency or amplitude shifts caused by the condensation of any volatile components onto the SAW transducers would be negligible.

I would have thought that the use of silicone rubber compounds for mounting SAW filter substrates would have been a logical development for any company working in this field; the use of DC738 in particular might have been commercially sensitive, but was unlikely to have been militarily sensitive.

2.2.3 Cross-hatching on the underside of the SAW substrate

I doubt that the use of cross-hatching to scatter bulk acoustic waves (BAW) could be regarded as military sensitive information – the idea of roughening the back surface of the SAW chip with a roughness whose scale is comparable to the wavelength of the BAW, in order to scatter unwanted BAW (which could otherwise cause distortion of the SAW response), would be a logical development for any company working in this field. Details of the HRC technique of using ganged diamond-impregnated saws to produce the cross-hatching might have been commercially valuable to a competitor.

In the case of the Demonstrator filters, I do not think they used a back-cut substrate, I think the substrates were either back-angled, or (at MEDL), corrugated on the back by sand-blasting, as this was found to be more cost-effective for that particular design.

2.2.4 Reproducibility of olfactory SAW devices

I do not recognise this SAW work (from HRC's Long Range Laboratory?), but in any case I do not see how this comment on SAW reproducibility could be of use to an enemy.

2.2.5 Electron beam Coater – metals used in making transducers

I can confirm that Ag metallization was not used in SAW filter manufacture at HRC.

2.2.6 BAW device wrongly linked to the Rapier missile

"It subsequently became clear that there was no connection between the device and Rapier"

This puzzles me; in 1975 at Hirst I worked on the small-scale production of spinel delay lines intended for Cossor Electronics, and I knew this particular delay line to be for an application in the Rapier missile system, which I believe was being sold to an Arab nation.

2.2.7 Overall analysis of the SAW exhibits was distorted

The quote from the judge did not exclude "military purpose" (as is implied).

3 The 'restricted' document's history demonstrates its low sensitivity**3.2 Stages in the document's history**

1982 – the "Demonstrator" SAW filter design was carried out in the Device Applications Laboratory by Dr Chris Emin under the supervision of Dr Robert Peach. This would have been to the RESTRICTED document ref. 79481/PBH/BB/SO8, as this appears to be the only document describing the requirement at that time (issued January 1982). The designs that

John Clement
11/10/07

evolved were designated as DEM122, DEM123 or DEM125. I believe that the filter was generally known to those in the Device Applications Laboratory who were associated with its design, as being for the ALARM missile. This would probably not have been through any document, but by mention at meetings with the immediate customer (representatives of MSDS). Also I am not sure exactly when in the evolution of the filter design that this would have become known. The general purpose of this missile would also have been understood at HRC (the name is an acronym describing its function). It was generally understood in the Device Applications Laboratory that, from a security point of view, for programmes requiring RESTRICTED documents, the applications and eg SAW filter frequencies should never be mentioned or recorded together, eg in reports and memo's; the mention or recording of either in isolation of the other was generally thought to be acceptable.

My association with the development of the filter, and its transfer to MEDL for higher volume manufacture, continued from 1982 until 1985. The filter was in low volume production at Wembley in 1984 and 1985 (30-off A-Models and 40-off B-Models) to ANOTHER specification, which post-dates the RESTRICTED specification and was NOT classified. This was MSDS document ref. 1011-00435 Issue 1, dated 27th March 1984. After this the filters were manufactured at MEDL, but I cannot confirm to what spec. I would have been aware at about this time that MEDL were offering commercially-available filters with the same performance as those they were making for MSDS (these being identified at some point by MEDL as Type DW9210 in their brochure).

At some time between the design of the filter in 1982 and 1984, it was selected as a test vehicle for HRC's BS9450 Capability Approval Programme for SAW Filters. It was intended that the achievement of this quality standard would encourage users of SAW filters to procure devices from Hirst (notwithstanding the attractiveness of receiving funding from the BS organisation for the exercise itself). The filter was identified as CQC5 under the Hirst programme. A number of other Hirst SAW filters had already been, or were being, or were planned to be, qualified under this scheme, ie CQC1 – CQC4 had already been designated.

Each "CQC" covered a different region of the SAW filter technology "envelope". CQC5 was of interest as a medium bandwidth UHF filter using lithium niobate as the SAW substrate material.

A number of CQC5/DEM125 filters were tested under this programme and the results were reported in eg HRC Report 16,822C (1984). The QA representative for at least part of this work, if not all of it, was Mr DT Lewis. It is my presumption that, as part of Mr Lewis's involvement in the preparation of BS9450 documentation and qualification testing of the CQC5 filter, I lent him my copy of the RESTRICTED MSDS Specification for the Demonstrator SAW filter.

3.3 Conclusion

To answer the question about the reason for using the RESTRICTED document at HRC; it was essential for the design of the filter. How could we have designed it without a specification?

4 Chronology and non-disclosure on the 'restricted' document

4.5 Unsatisfactory resolution by the Security Commission

The most enigmatic and significant statement in the Security Commission's report is its reference to the 'restricted' document:

... at the time the document was created it was not specifically linked to a particular weapons system. (SC Report, Annex A.5)

I think it was known at HRC and at MEDL in 1982, from discussions with representatives of MSDS, that it was for ALARM.

4.6 Conclusion

"The Security Commission's report raises grave doubts about what else had not been disclosed, due to its revelation that the 'restricted' document had not been linked to a particular weapons system at the time it was created."

I think it was known at HRC and at MEDL in 1982, from discussions with representatives of MSDS, that it was for ALARM.

John E. Lewis
11/10/07

"No evidence or interviews were taken with that company." [ie MSDS]

In my opinion the authors and the numerous nominated MSDS personnel on the spec would be far better qualified than anyone at Hirst to confirm its purpose, sensitivity etc.

"There are 16 staff identified on the document, but not one of them was asked to explain the document's value. Mr F.S. McClelland, who had been issued with the copy No. 14 involved, was not asked how he came to lose the document."

Notwithstanding not being asked, I believe I must have lent it to Mr Dewi Lewis with a view to helping him with the documentation for, and planning of, a BS9450 Capability Approval Exercise for SAW filters using DEM125/CQC5 filters as the qualifying vehicle.

5 Dr Lewis's reliance on "hearsay" evidence and lack of corroboration

No comment.

6 Curtailment of Dr Lewis's cross-examination

No comment. I am not a radar expert.

7 Defence's lack of access to expert evidence

No comment.

8 ALARM's role in the 1991 Gulf War

No comment. I have no knowledge of the use of ALARM etc in the Gulf War.

9 Dr Lewis's claim he could identify ALARM

In general, no comment. It is possible that ex-MSDS engineers could respond constructively to the points in this section.

9.4.6 The obscure source of Dr Lewis's claim

The Security Commission's report stated that:

... at the time the document was created it was not specifically linked to a particular weapons system. (SC Report, Annex A.5)

I think it was known at HRC and at MEDL in 1982, from discussions with representatives of MSDS, that it was for ALARM.

10 ALARM's method of deployment was "sensitive"

No comment.

11 Issues Dr Lewis claimed were important/sensitive

I am not qualified; it is possible that ex-MSDS engineers could respond constructively to the points in this section.

11.3.3 Defence's Reply

The information in Section 9.4.7, indicates that ALARM has a wideband microwave receiver. Wideband superhet receivers may require wider IF circuit bandwidths, of perhaps 500 MHz. (Source 12, p.198). This calls into doubt whether ALARM is connected to the 'restricted' document, and, if it is, whether it has a multiple frequency conversion receiver – if true this would further invalidate Dr Lewis's argument, because the 10 MHz filter would then relate to a later IF stage in the receiver.

I think it was known at HRC and at MEDL in 1982, from discussions with representatives of MSDS, that it was for ALARM.

*F.S. McClelland
11/10/07*