

# WITNESS PROFILE

**NAME:** James Thomas Thurman

**INDICTMENT NUMBER:** 587

**STATUS:** Prosecution Witness

**SUBJECT MATTER:** Chapter Ten – Mebo/Timer

**MATERIAL PRODUCTIONS INCLUDED:**

- Precognition
- Appendix A: Fragment Sketch
- Appendix B: Indian Head Test Results
- Appendix C: Atlantic City Test Results
- Appendix D: Crown Production 284
- Appendix E: Crown Production 285
- Appendix F: Crown Production 287
- Appendix G: Marwan Khreesat FD302
- Appendix H: Material from Butera & Andrews

**COMMENTS:** See end of precognition

**NOTES:**

**PRECOGNITION OF  
JAMES THOMAS THURMAN**

**Taken by EMM**

**JAMES THOMAS THURMAN states as follows:-**

My full name is James Thomas Thurman. I was born on 25<sup>th</sup> August 1947. I currently reside in Richmond, Kentucky.

I am currently Associate Professor in the College of Law Enforcement at the University of Eastern Kentucky. That University is one of four Regional Universities in Kentucky. The University has about 1,600 students and of its type it is the second largest in the United States of America. Students come from about twenty five states and six foreign countries.

Our system in America may be different from that in the UK. Our students are about eighteen or nineteen years old when they come out of High School and come to University where they do a four or five year course. The University provides degrees in different courses. There are Bachelor of Science degrees in all cases. They cover Criminal Justice, Safety, Fire Science, Insurance Studies etc.

I am in the department teaching Fire Science and Safety Engineering Technology. My speciality within that is Investigation. There are Basic Investigations and Bombing investigation. I teach methods involved in processing bombing investigations. I have been in this for about two years approximately. I retired from the FBI on the 2<sup>nd</sup> of January 1988 and commenced at the University on the 5<sup>th</sup> of January 1988.

I am myself a graduate of the University of Eastern Kentucky. I went there first in 1965 because I wanted to be an Attorney. I actually graduated in 1969 with a degree in Political Science. I joined what is called the ROTC Programme while at University and this prepares one for the possibility of serving as an officer in the US Military. I was commissioned as a Second Lieutenant in the Army at the height of the Vietnam War.

I got into the technical side. I did not have what you might describe as a regular army commission. I was with the Ordnance Corps. I did my basic training and then was assigned to the Edgewood Arsenal in Maryland with responsibility for the escorting of chemical and biological materials. It could be said I was part of the Technical Escort Duty.

I worked on explosives within the Unit at the Arsenal and in 1970 was assigned a post in Korea for six months. That was in June 1970.

I was committed at that time to two years in the Army but I stayed for about four years and put in for a regular commission and was granted it.

In the end I spent about one year in Korea as Lieutenant in an Ammunition company. Then I had my own command and my own company which was an ammunition company because I decided to stay in the Army and not go on to Law School.

The Ammunition company receives ammunition stocks, stores them, ships them out and disposes of old ammunition. A huge depot was involved and we were effectively shipping out ammunition etc from Korea to Vietnam. When the old stock was shipped out, we got in new stock. It was a turnover situation.

In June 1971 I left Korea and entered what is referred to as the Explosive Ordnance Disposal School at Indian Head, Maryland. I received formal education in Physics, Chemistry etc all as relevant to explosives. I received training in (1) Chemical Ordnance (nerve agents), (2) Conventional Ordnance (bombs etc) and (3) Nuclear Weapons (electronics, fusing systems etc). I was five months at the school.

After graduating from it, I was posted to the Bomb Disposal Unit for training in about March 1972 until April 1977. This was outside Washington. My primary responsibility was for protection of the President along with the Secret Services. At that time I carried out a lot of research. I learned my subject very much by practical experience. If you like, I played with explosives. I increased my knowledge enormously. The school gave me basic information but it was then really up to me to learn from empirical experience.

I travelled extensively overseas with the Secret Service guarding the President and Vice President. I also dealt with the FBI and the US Marshalls. My expertise in explosives was the reason I was part of the protective team.

I became interested in the FBI in about 1975/1976. I think I resigned from my commission on 30<sup>th</sup> September 1977 and entered the FBI Academy at Quantico on 17<sup>th</sup> October 1977.

I should have mentioned that in the Army we had proficiency testing each year. That involved testing over a two week period in the field. There was then two weeks of formal training and from time to time while in the Army one had to go back to Indian Head for advance training in particular subjects.

When I joined the FBI I had fourteen weeks at Quantico and I graduated from the Academy in February 1978. I was posted to Charlotte, Northern Carolina as a Special Agent. I was made Bombing Co-ordinator for the Division i.e. I was the Investigator for the State.

For about three years I did investigations into bombing cases. I was then invited to come to the FBI Laboratory in Washington to be a Hazardous Devices Examiner. I did in-service training sessions at Quantico. I had additional training in areas of speciality to do with bombing and explosives.

In the USA at about that time there was something like 3,500 to 4,000 bombs each year requiring to be investigated.

I would say that the proportion of my work was less than 10% in respect of bombing incidents. The rest was normal investigative work.

As I have indicated the FBI Laboratory is within the FBI Building in Washington.

I had training for ten months under qualified examiners. I think my training started in February 1981 and ended in December 1981.

I read a myriad of relevant books. I examined the files of the cases involving explosives and I began to collect relevant data. I remember I toured a number of manufacturers of explosives.

I spent time at the Explosive Ranges at Quantico. I got involved in making something close to a real bomb. I conducted experiments. This was over a full ten month period. When you explode a bomb you see what happens and then you know. You cannot understand bombs simply from reading books.

I am asked if it was structured training. It was.

I remember the MOOT Court being the most demanding exercise. We were trained in how to give technical evidence. [*The exact description the witness gave of his MOOT Court experience was "man, you get killed!"*]

After your training you hear if you are to be certified as a Hazardous Devices Examiner. In December 1981 I was duly certified as a Hazardous Devices Examiner. I would say that was near to a record time for that to happen.

From December 1981 onwards I worked as an examiner on menial cases. I worked in a unit with five or six agents and one supervisor. Each agent had a Physical Science Technician who helped him. We carried out replications etc. The Technicians are non-FBI agents. Within the FBI lab, the Examiner would not do all the analysis e.g. the physics, the metallurgy. Others do this and give the examiners the results. When it came to examination of components then we would do that. If it involved electronics then sometimes we did not do it. Latent fingerprints, blood, handwriting, typewritten documents examination etc were carried out within the FBI lab but other FBI lab examiners did this. It would not be within my field. We worked with the Agent in Charge. I sometimes did my own tests but it depended on the case I was working on.

Handwritten, typed or sometimes verbal reports would go to me. I would pull them together and I would end up reporting on the whole job to the Agent in Charge.

We sometimes had to go out to the field and offer advice in relation to explosive devices. Sometimes we did all the work involved i.e. we were a combination of scenes of crime examiner and forensic scientists.

From 1981 onwards I would say I examined a large number of devices and did a considerable amount of research at Quantico. We would build up a device and "shoot it". We would then ask a question "what damage would this do?"

I remember that we had a case load of about thirty cases at one time in the unit and one could not replicate every one. I mean thirty cases per examiner.

I was a member of the International Association of Bomb Technicians and Investigators.

I am asked if there was in-house training provided by the FBI. The answer is that there was. People were brought in from outside to lecture to us and so on. We were not required to have technical degrees. The ascent was on practical experience then. It would not hurt to have a technical degree. My expertise was from the military. I also went to night school and in 1983 got a Masters degree in Forensic Science from the George Washington School. That would be in the Fall of 1983. There was also informal training within the FBI by means of discussion and sharing knowledge with colleagues.

I am asked if I often gave evidence. Within the Explosives Unit we testified less than anyone else in the laboratory. The reason for this is that by the nature of any improvised explosive device the person who builds it is not going to be around and thus there may be no clue as to who made it. With a crime of passion, for example, you may know who was involved. Bombing tended to be involved in far less cases. Thus there was less opportunity to give evidence.

Having said that, I would estimate that I have given testimony twenty to thirty times. That works out as an average of perhaps twice a year. I have been accepted as an expert witness on explosives in Federal and State Courts throughout the United States of America.

I am asked if I have kept records of various devices I have examined and the answer is that I have. I kept files of all the reports that were sent out by the Unit, all of which interested me. We had no computerised system in respect of records within the FBI laboratory. No categorisation was made. I came out with the idea of a computer system. A database of all cases was prepared along with a scanner. Photographs were scanned in and there were search engines installed. I think this was set up in the early 1990s.

We shared our findings with other agencies. There was no system of mandatory exchange.

In respect of significant devices information would be sent to "Bomb Data Centre" and it would send out details within the United States and also often in the United Kingdom. The Bomb Data Centre was effectively another unit within the laboratory which collected information and gave out only sophisticated information to people further afield in the United States and perhaps even in the UK. It also dealt with all training to bomb personnel.

This would mean that a normal simple pipe bomb would not result in a flow of information but a more sophisticated device would result in details being circulated.

In December 1994 I was made Unit Chief. The Bomb Data Centre merged with the unit on the same day. The one unit within the FBI Laboratory was called the Explosive Unit Bomb Data Centre.

In January 1997 the units were split. I then became Chief of the Bomb Data Centre. In January 1998 I retired.

**LOCKERBIE**

On 21<sup>st</sup> December 1991 my Unit Chief at that time, Chris Ronay, told me about the Lockerbie plane crash. At first I only knew that a plane had come out of the sky and that there had been a probable mid-air collision. I think my Chief had a conversation with the overall Laboratory Director (Mr Castingay?) at about 4 or 5pm Washington time on 21<sup>st</sup> December. A collision seemed less likely.

All I remember is that I went home and then was woken up by a telephone call and told to pack.

I left on an FAA plane for the UK. There were three of us from the FBI. Paul Schrecker (an FBI examiner), myself and an FBI photographer (Larry Wallery?). There were also people from the FAA and the National Transportation Safety Board. We were going to an accident investigation.

I am asked if it had transpired that there had been no crime involved would the FBI have been involved at all. I can recall in relation to the TW800 crash in 1996 that it was a complete accident and yet the FBI was involved until it was clarified that it was an accident. Up until then no Boeing 747 had simply fallen out of the sky at cruising altitude so obviously there were immediately suspicious circumstances and it was entirely appropriate that the FBI should be involved, given it was a US carrier.

We flew to Newcastle, got a taxi to Carlisle and went to a hotel there where we showered etc and we went to the crash site at about 9am on 23<sup>rd</sup> December 1988.

There was only one FBI official at the site who was Tim Dorch (Assistant Legal Attaché, US Embassy, London).

We did very little on the 23<sup>rd</sup> of December 1988. We wanted to help but it was sovereign territory of UK. We did go out and walk about. We did have discussions with UK personnel but I cannot recall any details now.

On 24<sup>th</sup> December 1988 the FAA and National Transportation Safety Board People went off.

Paul Schrecker and I went off with a Scot looking at the fields. There was no driving. We went to the large hole in the ground near to a row of houses that had been destroyed. We examined the cockpit of the aeroplane briefly. We walked about the fields. We looked at components lying about the field. We were getting a picture of what had happened.

That night it became clear that debris was scattered over a huge area and I think the end result was that it covered something like 845 square miles!

I recall that in the afternoon of 24<sup>th</sup> December 1988 a piece of metal was brought over by an AAIB man. He said "this was recovered. What does it mean?"

It was clear that it was a piece of plane that looked as if it had been the subject of explosive damage. I said if this is a part of the plane then there is evidence here of criminal activity. There was pitting and cratering evident on the piece of metal. It looked promising but a metallurgist was clearly required to examine it.

On 25<sup>th</sup> December 1988 we established where the piece of metal had been located. It was apparently at a farm. I went with some Scots to the farm. There was a gaggle of us. I remember it was raining and it was foggy. We saw a piece of metal sticking in the ground. It seemed to be a skid rail for a baggage container.

The Scottish Police took custody of it. They seemed to be flabbergasted that we found it. I heard a yell. I was over a ridge at the time. I saw it simply sticking into the ground. I cannot actually recall if it did have pitting, but it was very close to the heart of the explosion and was blackened. The rest of the day was spent searching the field nearby and on the evening of the 25<sup>th</sup> December 1988 there was a de-briefing.

I reported to FBI Headquarters that it looked like we were dealing with a bomb. It would take time, I explained, to collect the pieces. At that stage, everyone was quite understandably concentrating on the location of bodies.

I went back to the US on the basis that I could return once all the debris had been pulled out. I went back to Lockerbie in January 1989 but I cannot remember the precise date. I brought a number of FBI colleagues with me, all from the Explosives Unit. I was in charge. There was Rick Hahn, Paul Schrecker, David Williams and Greg Carl. We were not in the evidence chain of custody. We were more advisors.

Later we did examinations of materials. This took place in Longtown where the plane was initially reconstructed. Pieces had been taken there. Later the full reconstruction job was done at Farnborough. I have seen it.

Rick Hahn was despatched to Dexter where they dealt with baggage and personal effects. He was looking to help. He was looking to see if there was evidence of explosive damage and if so materials etc could be sent to London for detailed analysis. The rest of the team were with me in Longtown.



We were looking at debris from the plane and baggage containers. It had been taken there. We watched and helped if we were asked but we carried out no testing.

This process lasted until there was nothing left for us to do. We documented where the location of the damage was and also where the damage to the luggage container appeared.

We came back to the United States of America with absolutely nothing in our possession.

I think I returned in February 1989. On my return I looked at my Notes and looked at the various photographs that had been taken. Decisions were made in conjunction with the Crown that we needed to do some testing.

Alan Feraday (the Harrow Guard) and I got together with FAA people to try to determine the quantity of explosive that had been used and where the suitcase had been loaded in the luggage container on the plane. I wanted to know where in the container the bomb had been positioned.

During the Spring and Summer of 1989 a series of tests were carried out in the United States. Tests to try to determine the quantity of explosive used and the location of the suitcase within the baggage container were carried out at Indian Head, Maryland (*see results – attached at Appendix B*). I am asked who was in charge of these tests. It was not Alan Feraday and it was not me. I would say it was a co-operative venture. Alan Feraday was back and forth. I think it must have been about two weeks at Indian Head. I had known Alan Feraday in the past. We worked some cases together. I think one involved the provisional IRA. I respected Alan Feraday and his depth of knowledge. I assumed that the respect was mutual.

A second series of tests were carried out at the FAA Technical Centre in Atlantic City (*see results – attached at Appendix C*). I stress that the prime testing was at Indian Head.

I am asked why the second set of tests was done. I think this was more towards examining the damage on the aircraft skin or the body of the aircraft. We had a DC10 or a partial body of a DC10 and we wanted to replicate the size of the hole in the body of Pan Am 103. I kind of disregarded these tests. I am asked why. A DC10 is not a 747. Plus the test was not the best we could do. We talked about a 747 but no such experiment ever took place.

And now to more detail of what we did at Indian Head:-

Five tests were done. We used suitcases full of clothing. We got the suitcases from lost and found depots so they were genuine suitcases of various types with actual clothing etc in them. We used high speed photography and videoed what we saw. Some of the suitcases were Samsonite suitcases.

Alan Feraday prepared bombs inside Toshiba radios. These were loaded into suitcases with clothing about them. We used various different charges and suitcases in different locations.

After five tests we felt the observable damage to the baggage container in which the bomb suitcase was placed and the characteristics of the damaged suitcase etc were similar to the damage to the plane in Scotland. There were fixtures of aluminium in the bottom of the container and these were fragmented and broken off. Photographs taken of the tests and of the actual damage were not identical but were very close.

So far as quantity of explosive is concerned, we had a spread and came to the view that less than 1lb of plastic explosive had been used.

We also decided that the suitcase was in the second layer. They were surprised that we got the conclusions so quickly.

In relation to the quantity of explosive all I can say is that someone could have made up the mixture. I cannot be sure about this but I think there was RDX and PTN in the explosive. I cannot say it was Semtex only that there was a combination of these two elements in the explosive. I was relying on Alan Feraday and his colleagues so far as the type of explosive used was concerned.

I do not recall why Semtex was used. It could have been American C4. I think the velocity of detonation would be very close i.e. about 24,000 ft per second. That is the mean. It was unequivocally a high energy explosive.

In 1988/89 Semtex was not recovered or used in the United States but I knew it was used in Northern Ireland and in Europe. The first time I ever saw Semtex was in England and Northern Ireland. I know there are different kinds of Semtex and different colours; some are red, black, orange etc. I am asked why there are different colours and my understanding is it is for identification.

The obvious parameter so far as the quantity of explosive tests is concerned was that the explosive used should fit a Toshiba radio cassette player.

Alan Feraday seemed to know the type of Toshiba used. I think he had examined a fragment which was part of the circuit board of a Toshiba radio. My evidence about this is hearsay. As I never saw the material in question.

I know that five Toshiba radios were bought. The Semtex or high explosive material was packed by Alan Feraday but sometimes by me. Indeed I think that Walter Korsgaard and Calvin Walbert, both of the FAA, were also involved from time to time in helping with the packing of the Semtex into the Toshibas. There was a range of weight from less than 400 grams up to 1.5 lbs.

I can say that only orange plastic explosive or Semtex was used with the two components I have mentioned. I think it was Semtex H. We did have some form of scientific scale and it was very precise.

We took out a component from the Toshiba radio inserted the Semtex and then replaced the component.

We did not know if the bomb had a barometric device. At that time we knew very little about the IED. We simply wanted a match regarding the quantity of explosive used.

I am sure that nothing was left out of the Toshiba radio cassette. It was workable even with the explosive in it. Even when it was fitted with 1.5lbs of plastic explosive, it would work. It had batteries in it etc.

It was detonated by an electronic detonator placed inside the radio. We had navy personnel there and they assisted with the detonators. We were obviously situated in nearby bunkers when the explosives were set off.

There was a small hole in the side of the radio where the wires for the detonator passed out and this was then fed through a small hole in the suitcase.

I am asked about the size of the detonator. I think it was about 3/16" in diameter. It was round, cylindrical. It came into contact with the plastic explosive.

The radio was inside a suitcase which in turn was inside a baggage container on a stand. We did our best to replicate the inside of a 747. Stands were built and each time we would have to rebuild the stands and load in more bags.

I now turn to the question of the location of the bomb in the container:-

This obviously has a relationship with various interviews at Heathrow and Frankfurt. It was thought that luggage from Frankfurt was of significance but I cannot really speak about this.

I am asked what margin of error there might be regarding the perceived position of the bomb in the container. I do not recall if this was ever established. What was established was an approximation. I am asked if there are any special features that I can recall. I think there had been damage to the skid rail and resulting damage to the bottom pan of the luggage container on Pan Am 103, as well as some general damage to the container. In one test we created less damage and in another we created more damage to the container.

In my opinion it is possible that if the IED on Pan Am 103 had gone off in the centre of the baggage container AVE4041 then it may have been contained but I do not think that is probable.

We did try to replicate the conditions that were obtained in Pan Am 103 but obviously it is difficult when one does not have a complete 747 hold to work with. The container being experimented with was next to another luggage container and was on a stand. We did our best to replicate the bottom of an aircraft but it could not be perfect. The luggage was loaded in a way that was supposed to replicate how the luggage might have been placed within Pan Am 103.

In summary, what we was at Indian Head was consistent with what had been identified from Lockerbie. I do not know Alan Feraday's views. He may think that Atlantic City tests were more significant but I maintain that the tests there were of limited assistance.

The tests were completed by the late summer of 1989.

In the fall of 1989 I went back to Farnborough. The plane and cargo containers had been moved there from Longtown. AAIB had been reconstructing the plane from recovered debris in three dimensional form and I examined it. On the floor in two dimensions it would have been far more difficult to determine the size of the whole in the side of the plane but in its built-up form it is easier to see and I remembered I did various drawings etc.

Nothing of substance seems to have happened until 1990. I received a photograph from FBI channels but I think it had originally emanated from Stuart Henderson from the Scottish Police. The photograph was a piece of printed circuit board which Alan Feraday thought might have been part of

the timing mechanism of the bomb. Alan Feraday and the Scottish Police were trying to determine the source of the fragment and was seeking the assistance from the FBI.

It was simply one photograph. It had been greatly enlarged. It was clearly a piece of circuit board with circuit tracking on it and it appeared to have explosive damage. I say that based on my own observations and my experience in other cases. I think it was Alan Feraday's conclusion that there was explosive damage and I did not disagree with him.

I am asked about the shape of the circuit board fragment. All I can recall is that it was rectangular but almost square. I am asked if it was shaped in some way. I think that a half moon shape had been removed. I think there was a manufacturer's cut i.e. a clean cut and part of the manufacturing process and not an arbitrary cut. The top had a clean line but there was at the right a half moon, a 90 degree turn and then another 90 degree turn. The three surfaces appear to be blast damaged. The fragment was complete. It did not appear to have been altered.

I am asked if I received anything else apart from the photograph. I did. There was something in print and I think it was information from Alan Feraday to the effect that (1) it had been checked by him whether the fragment might relate to the Toshiba radio and it had been established that it was not consistent with anything within the radio, (2) the fragment had been found in a shirt that had been near the explosion and (3) the fragment was likely to be part of a fusing system for the IED.

After I had looked at the photograph I agreed.

I am asked if the document to which I am referring was definitely from Alan Feraday. I do not know. I imagine his name was there but I do not recall if the document was actually signed. I thought it came from him.

I am asked if I was requested to do something. Yes I think I was asked (*hesitation at this point*) to help. It came through FBI channels. I do not recall getting anything precisely from the senior investigating officer.

I went through all our records in the laboratory to see if we had ever examined a device with this type of circuit board. I carried out examinations regarding the Japanese Red Army. It looked as if it could have come from a travel alarm clock. I thought it could be a timer fragment.

We had a team of people in Malta at that time. I asked investigators of the FBI in Malta to buy every type of travel alarm clock they could. I got a box of them and I started doing examinations. I went

through our non-computerised files. I am now asked who was in Malta at that time. All I can say is I can see his face but I cannot recall his name.

We had fusing systems from Information Reports from all over the world and I went through these. This was in the Bomb Data Centre.

I distributed the photograph around the laboratory to see if anyone could assist. I also consulted former examiners. We got a big zero. Nothing was even close.

You know from experience whether something is manufactured or improvised so far as a circuit board is concerned and this appeared to be a manufactured circuit board. I was stumped. I had other cases to deal with and it took me something like three months to go over all of these records.

I decided with the permission of Stuart Henderson from the Scottish police to go outside the FBI.

I presented the photograph to a guy called John Orkin with the CIA who was considered to be internationally experienced. I showed him only the photograph. I went down to see him. He looked carefully at it and I asked him if he had any hardware within the unit. He said no. I asked him to check. He brought out a timer or a group of them, I do not recall. I saw one in an open box. The circuit tracking on the timer looked close to what we had. He gave me a microscope. We looked together at the tracking. We tentatively identified that the fragment emanated from a circuit board of the type we were looking at. I was there part of the day. I cannot recall if it was morning or afternoon. I left nothing with him. I could not even leave the photograph with him.

I am asked whether he looked through records. I can say that we both looked through photographs that the CIA had. I saw one photograph that looked interesting and that was what led me to ask him whether he had any hardware. Thus it was looking at the photograph that led to an examination of some hardware that they had. This particular timer that they had in their possession had been kept somewhat contrary to his stated practice.

The timer discovered within the CIA building had a green top. There were switches on it. There were two thumb wheels to set the time and there was a designation on the front of it that said "MST-13". I think the top of the device was green. It was square or a little off square. It was in a box but the box was in a sense part of the timer.

The back from memory was a piece of metal with a black finish and in each corner there were screws and spacers holding off the back metal from the components something like a sandwich.

There was a battery. I am not sure if the battery was inside or not and there was a black electrical cord terminating outside the box. At the end there was a terminal which was two pronged at the free end. The middle of this was a red light LED (*light emitting diode*). There was a plastic type of terminal there and you could mount the red light LED (*light emitting diode*) into it. I recall we opened it up with a screwdriver and looked at it with the microscope. John Orkin looked at it also. He agreed with me that what we were looking at was a complete timer which had a circuit board as part of it and that the circuit board was the same as the piece of circuitry apparently recovered from Lockerbie.

I am asked what characteristics led us to this conclusion. I would say the layout of the circuit was the same. There were also imperfections in the circuit itself which were observable in the photograph from Scotland and also in the complete timer. It was a like a fingerprint.

It is difficult to describe this without doing a sketch. [*At this point the witness went to a board and sketched out the fragment of the circuit board as he recalled it. This is reproduced at the end of this precognition as Appendix A. Appendix A was prepared by EMM from a sketch he made in the course of precognition.*]

In my sketch I have tried to show you where I think the imperfections or little humps were on the fragment. I would imagine that the photographic negative for manufacturing purposes would repeat each time any imperfections.

I am asked if I am familiar with the expression "solder masking". I am familiar with that expression. I am asked if I could tell if the face of the fragment, as seen from the photograph and from later examination, appear to have been solder masked. In my view it did not appear to be.

The photograph of the fragment that I showed to John Orkin and which I had received from Scotland did not have a solder mask on it.

I am now asked whether the photograph that I was provided from Scotland was a colour photograph or a black and white photograph. [*There then ensued a very long pause. The witness was extremely hesitant for at least two or three minutes. What follows is exactly what EMM recorded him as saying.*] "Aw ... Sheez ... I don't recall ... I think it was colour".

I am then asked how I was able to tell if it was solder masked from examining the photograph. I say that the mask covers the tracking so that it is not shiny. This was shiny and so there was no covering or no solder masking.

However, the **actual** device that I had physically examined in the presence of John Orkin of the CIA was solder masked.

I am asked if it was solder masked on both sides. My answer is that to the best of my recollection it was solder masked on the circuit board side as the tracking had been covered but I do not recall if the front side was solder masked.

I think that the circuitry side was solder masked for sure. What I refer to is the top part with MST-13 on it – it is more difficult but I do not really recall if it was masked.

I took the photograph back and also the timer itself to the FBI laboratory and I examined the timer more carefully. I became more than certain that the two were linked i.e. the fragment from Lockerbie and the intact timer from John Orkin.

I looked closely at the imperfections and they seemed so much alike. Nevertheless the identification was still somewhat tentative and I called Ed Marshman of the FBI and John Hicks, the Director of the FBI laboratory, to tell them of my find.

Then I told others in the FBI and no doubt, they told Stuart Henderson. I told no-one apart from the FBI senior people.

In about June 1990, a few days after my conclusions had been communicated, Stuart Henderson, Alan Feraday and Willie Williamson came to my FBI laboratory and they brought with them the actual fragment (PT35).

We did a one-to-one examination. I caused photographs to be made showing the piece of circuitry board I had and also the PT35 fragment together. Everyone agreed that they were one and the same. Stuart Henderson and Willie Williamson saw with their own eyes the comparison and they agreed. Alan Feraday definitely agreed.

I am now asked whether the actual fragment that they had brought over looked like it did in the photograph that had been sent to me. It did not. It had been cut. I learned that the fragment had been cut in the process of trying to identify it. I do not know who made the cut. The bit that had been



removed was available and was examined. I am asked exactly what was cut. A piece had been cut out from the top of the board. I do not recall precisely where the piece had been cut off. I do not know why someone would cut off a strip at the top.

I am asked if I am familiar with the strip being buried in resin then polished down etc so that one could examine the laminates etc. I am not really familiar with this. I do not recall.

I confirm that the fragments I saw were in a container. I recall two pieces. There may have been other pieces. They had cut a bit from the top and a bit in the area of the half moon. The smaller bit did seem to originate from the larger bit. I think it was Alan Feraday who had decided to make the cut but you would have to ask him.

We kept the MST-13 whole device and they took the fragments.

I caused electronic exploitation by electronic engineers in the FBI laboratory i.e. we examined the MST-13 in detail and this was carried out by someone called Bob Howen of the FBI. I am not sure if he is still with the FBI.

We were doing this to examine the functionality of the MST-13.

I am asked about the provenance of the MST-13. I asked John Orkin and he said where it came from. The bottom line is (*hesitation*) I do not recall exactly but I think it had been recovered in Togo after an unsuccessful attempt to invade Togo. The Togo government had asked the United States for assistance to recover materials and the timer and other materials had been taken back to the USA.

I am asked whether there was already a report about the timer within the CIA. Yes there was. John Orkin did one and I saw it.

*At this point the witness was shown Production 284 (Appendix D), a report, and identified it as the one he had seen. He was also shown Production 285 (Appendix E) and confirmed that he had seen that report also.*

I am asked what the device is in Production 285. This is a CIA report. I do not recall how the report (Production 285) was brought to my attention. Logically it would have been John Orkin who would have brought this to my attention along the way.

On examining PT35 i.e. the timer fragment "partial eradication" of the printing on the circuit board had been made. The initials "MEBO" could be made out. I think I discussed this with John Orkin but I do not recall.

I do not think that John Orkin's report mentions "MEBO". On page 41 of Production 285 there is reference to MEBO. I recall asking who was MEBO or something like that. He then showed me Production 285 at page 41. I did not see the device in production 285.

I did not carry out any tests in respect of the composition of MST-13. Logically it would not have shown anything as I had nothing to test it against. You could examine the soldering etc. An elemental composition could have been carried out and a comparison done but that would not have been done by me. I did no destructive testing. I did measurements. I know that Alan Feraday did destructive testing and I was told this verbally by him. It is obvious that the fragment had been worked on.

I know that Alan Feraday got the MST-13 device from the FBI on 5<sup>th</sup> March 1991 (see FBI record PT302).

I am asked whether I would swab the fragment on receiving it at first. Yes, under FBI protocol I would have done so. I did not do it. But I would expect it to have been done. The swabbing would be done in order to attempt to detect evidence of explosives such as PETN or RDX.

I would expect the swabbing to have been done early on. I do not know the RARDE protocol. Under the FBI protocol we would do the residue analysis early on. I am asked if there is anything else we would have done. We would do the residue analysis and then we would do fingerprint testing then we might cut off a bit of the fragment to determine its composition. Different companies make circuit boards in different ways.

Bob Howen and I worked together to determine the source of the components of the original MST-13 timer.

We had a possible source in MEBO.

I remember Bob and I discussing whether the crystal was of US manufacture. I remember that, with his assistance, I travelled to "Saronics", a company in California who manufacture crystals in the San Francisco Bay area. They had a company outside Seoul in South Korea.

I am asked if there was anything specific about the crystal that would time date it. Yes, there was a possibility of establishing a certain period of time in respect of the manufacture of the crystal but I cannot recall the details now. I received a call in August or September 1990 that someone had gone to MEBO in Switzerland with a photograph and they had identified the fragment as coming from them so any enquiries then stopped and there were no reasons to continue with them.

After that everything moved to Switzerland and I did nothing.

I am asked if I ever spoke to Edwin Bollier of MEBO. I was present at the Magistrates Hearing in Zurich in November 1990. I think I did speak to Bollier at that time but briefly. I may have spoken to Meister. The proceedings were conducted in German. I may have spoken to both of them but it would just be idle chat and no interview took place.

I was never present again when Bollier was interviewed. I have not seen any records of the interviews with Bollier. I did not speak German but I was told roughly what the three people from MEBO had said.

I have not been involved officially since then.

I know Bollier has been in the United States and has been interviewed but no-one reported to me what he said and I have never been asked to comment.

The gist of what the three seemed to be saying was that they admitted that they had made the timer in question and that the photograph they had been looking at was of a piece of a timer. I think all three confirmed this.

I remember that I was on a television programme and that I was asked questions about the identification of the component. I do not think it was odd that I appeared on the programme as I received Brian Murtagh's permission. Brian Murtagh was actually in the room when I was interviewed and I also had FBI approval.

The best evidence in this case is with Alan Feraday. He has the fragment and he also has the MST-13 timer.

All I did was develop a lead.

**Comments:** Contrary to expectation, Thurman appeared modest and generally knowledgeable on his subject. He was at pains to explain that it was not his fault that undue praise was heaped on him for having repeatedly "cracked" the case. In fairness to him, in one sense he did have a very important role, i.e. he made the contact with the CIA which lead to an alleged match with the Togo timer and without his initiative the link might never have been made.

He is an experienced witness and will have been well briefed as to expected lines of cross-examination. I believe that if cross-examined very carefully and thoroughly, the huge ego that is bubbling under the surface could emerge. My feeling is that he feels aggrieved by the way his career was allowed to nose dive. He is still well regarded by former FBI colleagues, i.e. Hal Hendershot (Crown witness 459). I think the witness, in an effort to appear very balanced, might actually make more concessions than are due, e.g. in regard to characteristics of the timer fragment. He is well aware that we know of criticisms about him and that he is likely to be under attack (see Appendix H). My feeling is that, at least initially, a subtle cross-examination eshewing direct reference to his tarnished career and public criticism might illicit something of value. I genuinely believe there is a danger that he could attract the sympathy of the Court who may not be prepared to listen to a line of cross examination rooted , perhaps, in the irrelevant past.

**Note:** Thurman was involved in the FBI Interview of Marwan Khreesat. The FD302 ii attached at Appendix G.