

## The Threat to Independence and Impartiality When Using Manufacturer's Resources and Expertise. True or False

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### **Introduction**

An accident occurred to a police EC135 helicopter G-SPAO on 29 November 2013 in the centre of a major city within the UK resulting in a significant loss of life. The investigation was carried out under intense public and police interest and very significant political attention.



Figure 1

G-SPAO accident site

The paper offers thought and hopefully encourages debate regarding the close working relationships between investigators, manufacturers and operators to understand the events leading to an accident. It explores the idea that a very close working relationship may threaten investigative independence and impartiality. It uses the G-SPAO accident to set the context and background by which to discuss the topic.

### **Interaction**

This investigation required the investigators to choreograph and carry out a complex set of tasks, tests and research using the manufacturer's and operator's expertise, resources and facilities. For this and any investigation to be credible and withstand scrutiny it has to establish the facts as far as possible beyond doubt. With modern complex aircraft systems, structures and materials this can only be done with the help of manufacturers and access to their intellectual property. This means the investigators have to spend a great deal of time working very closely with the manufacturer often within areas of high commercial sensitivity. At the same time the investigator is exposed subliminally to the ethos of an organisation and the stress it is under from the aircraft operators, public and the media to get results. These factors could be seen as a threat to the impartiality and independence of the investigator.

### **The Risk**

A number of years ago a bank robbery was taking place which started to go badly wrong for the perpetrators. It ended up as a hostage situation, a very unsavoury situation for all concerned. However, this incident would have drifted into history had it not been for a very interesting relationship which developed between the hostages and their captors. The relationship manifested itself as a form of bonding and empathy between the hostages and their captors to the extent that they saw things from the captor's point of view even defending them after they were released. This event became the subject of a number of psychological studies and became known as the 'Stockholm Syndrome'. How then does this relate to accident investigation?

As far as the human liberty and freedom aspect of the case is concerned it doesn't, however if human psychology is considered it might, especially considering the bonding and empathy idea. To explain further, the days of the lone air accident

investigator working unaided to understand all the aspects of an accident are gone, even if they ever existed in the first place. The vast majority of significant accident investigations involve teams and multiple agencies, government and corporate and are dealing with modern and highly complex aircraft and multi-layer systems. The investigator cannot properly investigate on his or her own, they are duty bound to carry out a thorough investigation and look at every aspect in detail and in order to do this they have to work very closely with manufacturers and operators. The investigator also has to remain impartial and independent throughout.

### **The case in point.**

Work has just been completed on the technical aspects of the G-SPAO accident. Very sadly this accident resulted in 10 fatalities including the 3 crew. I do not propose to go into the details and findings of the accident, suffice to say there was a mix of human factors and technical aspects. It immediately became a very high profile accident in that it was an aircraft operated by an instrument of state, Police Scotland, which crashed causing bystander fatalities during a period of highly significant political debate and discussion regarding the very future of the UK. It was understandable that an accident as serious as this caused all concerned to want 'answers' and the resultant emotional atmosphere added enormous pressure to the investigation. The investigation initially focussed on both engines flaming out within less than one minute of each other and the disposition of the fuel within the aircraft leading to that situation. It was clear that this was not going to be a simple investigation and required the immediate involvement of the aircraft and engine manufacturers. In this case Turbomeca and Airbus Helicopters (Deutschland). Representatives of those two companies were nominated as advisors to the BFU and BAE Accredited Representatives and joined the AAIB team at the accident site a day after the accident. Day one of what was to become a long and 'intimate' relationship. It soon became very clear that the two Turbomeca Arrius engines were not causal to the accident and flamed out as a result of fuel starvation and so the focus turned very much towards all aspects of the helicopter fuel system.

### **Control?**

As an observation and I think one which all investigators can relate to, at the accident site the state investigator has command and control and has various 'tools'

at their disposal by which that can be maintained. I think it is true to say that manufacturer and operator representatives understand this and in my experience willingly comply with the authority gradient. As the investigation progresses it will inevitably involve work at the manufacturer's facility. In this case the lines of enquiry meant complex testing procedures were required which needed significant investment of time and resources notwithstanding disruption to other product test programs. In fact it ultimately required the construction of a fully functional EC135 fuel system mounted on an articulated platform. Work of this magnitude will often involve other individuals from various company departments not just the safety team. These people often have long careers within the organisation and unsurprisingly they are highly loyal to the company and will therefore naturally be very protective of their product and its reputation. I must stress that is not a criticism!



Figure 2

AH(D) EC135 fuel system articulated test rig

At the same time the public pressure on the investigator remained but now, by osmosis, the commercial and reputational pressures felt by the manufacturer are also brought to bear. I would suggest that in similar situations all investigators have experienced this to some degree.

### **Psychological pressure**

With this and many other accidents, subliminal psychological pressure on the investigator may also be present. To explain, all investigators have at some point in their work arrived at the manufacturers facility and been faced with buildings of various types large and small. Often, but not always, the size of the building and its facade is in direct proportion to the company ethos and ego. The visitor, the investigator, should be impressed, why? because he or she is meant to be. On entry to the building you are then faced with the foyer and reception, in which there is an air of calm authority and power. You are greeted by smart and often uniformed reception, staff, male or female, who seem, again in my experience, to have been specially selected for that role because of their style, presentability and people skills. Still impressed, you are meant to be! Although you perhaps don't know it, you are being disarmed and the authority gradient is subtly changing. You will also be given a piece of 'uniform', the security pass, with the company logo which you exchanged for your passport!



Figure 3

An example of a company headquarters

You may not be aware but the scene is now set for the next stage. You are led to a meeting room again set with the trappings of the company power, you will be greeted and treated with respect, invited to have a coffee and sit down where the company free pen and note pad or other 'goodies' perhaps, will be in front of you. This whole scenario is part of a world-wide standard, subtle or not so subtle, procedure applied by companies to obtain and keep customers. It's just that now it's automatically being applied to you the investigator. Hostage and captor, could be.

### **Inner Sanctums**

As on many occasions in the past in order to progress the investigation, access was required into the manufacturer's intellectual property. This is an area which can be fraught with difficulty because intellectual property, in stark commercial terms, has value and it is something which is of course very closely guarded by the owner. To smooth the path there has to be a high degree of mutual trust between the investigator and manufacturer and that trust has to be built. And, as we know some of the many ways in which trust can be built is for individuals to show an agreement in a common cause and demonstrate they that can be relied upon and trusted. Trust often includes friendship and when looked at that way we can perhaps see a risk and threat to independence and impartiality.

If we look at the phrase 'agreement in a common cause' I think that in all cases the safety investigative bodies within manufacturers common cause is to make their product safer and better, thus enhance their reputation. However, in a world where blame and litigation are endemic, factions within a company outside the safety investigation sphere are looking to protect themselves from liability, punitive measures and resultant reputational damage. The investigator, when viewed with the company lawyer's eye is seen differently and often seen as a threat.

The credibility and reputation of the investigator as seen by those outside the company, i.e. the general public and media, means that their report usually has weight and gravitas and therefore seen as fact, hence a threat by company lawyers. If the report gives facts which show a company in a bad light or, even by reader deduction, at fault, it won't be long before 3<sup>rd</sup> party litigation starts or the media launch attacks on the company reputation. Litigation as we know can come from a variety of quarters, victims, relatives, property owners, insurers and so on and will

inevitably be costly in monetary terms. The cost in reputational terms can be far greater and in some cases can never be recovered. So the stakes are high.

A fine line has now to be trodden, hinder the investigator by non-co-operation or time wasting and it will soon become apparent in the accident report; a simple line of fact for example words such as '*this data was not made available to the investigation*'. So the company is left with no option but assist the investigator with agreement in the common cause.

So here we are during an investigation and let's assume it is a complex investigation, EC135 G-SPAO, one in which the answer does immediately jump out. So there will be a number of lines of enquiry. Some will be simple and discount themselves very quickly others will require multiple layers of work, frequent meetings and hours spent in workshops and test facilities.

At each step the manufacturer will have a view they will be able to back it up with compelling evidence presented with the weight and gravitas of the corporate machine. Remember, they too have safety in mind but it is shared with the need to protect a hard won reputation.

So what about the EC135 G-SPAO investigation? I have to say that the cooperation from all the manufacturers and the operator has been exemplary throughout. Access to intellectual property and the investment in time and equipment has been extraordinary. At the AAIB request Airbus Helicopters built a fully functional articulated EC135 fuel system test rig and then carried out hundreds of man hours in test and research. At each stage, the investigation team were fully involved and were given open and free access to the relevant information. Gradually the many factors leading up to the accident were understood. The test rig demonstrated a phenomena which, although not unknown in general, it was not expected effect the EC135 fuel indication system to produce, in some cases, erroneous readings. But the work showed that it could. The knowledge gained during this work will drive safety changes but as far as the accident was concerned it told us what was possible but in this case not the cause.



Figure 4

Test rig top view



Figure 5

Test rig detail

### **Pressure and Action**

The pressure on the investigators on this high profile investigation had an interesting dynamic, clearly the manufacturer was concerned about their products and systems and by mutual agreement they were able to issue Information Notices and Service Bulletins. Additional political pressure was brought to bear during a historical and political debate with questions posed at very high political levels. Needless to say those questions had no influence on the conduct of the investigation but nevertheless were an unnecessary hindrance. Added to this, certainly in the early stages, was the intense and constant media pressure. It would have been all too easy to suffer an erosion of the independence and impartiality of the investigation had these pressures been allowed influence the process. It is true to say the investigation team resisted all these pressures very well with no leaks to the press or adverse public statements.

## In Practice

Of course the company hospitality system was in place and running, of course the manufacturer had very well found clear views and compelling theories which came across in their communications. Despite the close interaction the investigator independence was unaffected and the evidence for this comes from an interesting corner. A comment was made at to later stages of the investigation by the manufacturer expressing surprise that there seemed to be a difference of opinion on some of the detail even though work was carried out very closely together.

Why was this so? In part because additional work was carried out using other resources and the results from all aspects were tested, by peer debate, against each other. These debates were also extended to the manufacturers and the other investigative bodies. Needless to say there were some very lively debates as opinions and stances were presented, agreed and/or countered throughout the whole process.



Figure 6

**So True or False?**

True, there is a risk to impartiality and independence it would be naive to think otherwise. It would be all too easy to be swept along in the company ethos as an investigator is exposed to the cooperate machine. Friendships develop along with agreement in the common cause and gradually the investigator's view becomes tarnished.

However, there are subtle protections in place, although they may not always be obvious. Many investigators know to 'take things with a pinch of salt', a little phrase which means they are naturally sceptical and question everything. Don't worry about the cooperate ego and little free gifts it's all part of the game which is applied to all visitors so it could be seen as impolite to vehemently resist so don't worry. Never underestimate the experienced investigators 6<sup>th</sup> sense, that uneasy feeling that all is not what it seems as slick all too well tuned presentation takes shape.

Then there's the debate, the moment when an investigator returns and presents the findings to peers and the debate finds the holes in the argument.

That debate and discussion works too with the company and should be encouraged. It may be that differences are never resolved but there can often be common ground.

To conclude, yes there is a risk to impartiality and independence when an investigator is closely working with a large cooperate machine over a long period of time. But actually modern investigative team working processes, discussion, debate and the freedom to test ideas and theories elsewhere guard against this as they did with G-SPAO.