

## **Human Factors in Extremis**

### **The Rogue Pilot Phenomenon**

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The Germanwings crash has brought the rogue pilot phenomenon to the front and center of aviation safety attention. Unlike other aircraft accidents which may be resolved by evidence recovered from the accident site, the rogue pilot investigation takes the investigator into non-traditional areas of inquiry. Specifically, it will necessarily take the investigator into the personal and often private life of the flight crew. While accident investigators have adeptly addressed the issue of Human Factors via the lens of Crew Resource Management (CRM), Threat and Error Management (TEM) and Human Factors Analysis and Classification (HFACS) for decades, the issue of the intentional crashing of an aircraft by the pilot remains largely a dark corner of ignorance. The purpose of the paper is to add two additional perspectives to the inquiry into a potential rogue pilot investigation. They are: first, the perspective of a profiler of criminal behavior, and second, the psychological elements of acts of murder-suicide.

This is not a review of the Germanwings case. The investigation is not complete and the facts are not fully established. First, we will look at the definitions and concepts that allow us to proceed with a degree of knowledge into the rogue pilot phenomenon overall. Second, is a review of several of the cases which fall into the rogue pilot/intentional crashing category. Finally, we will look at specific lessons that have been collected from the perspectives of the Rogue Pilot 1. as a crime, and 2. as the manifestation of an extreme human factors mishap and the relevant psychological lessons therein.

I am not a psychologist. It is important to bring in trained psychologists into this kind of investigation as early as possible. I did, however, dedicate 18 years of my FAA career to the investigation and mitigation of unlawful acts against civil aviation. Unlawful implies intentional. Unlawful and intentional are two of the elements of the rogue pilot phenomenon. I led the Los Angeles portion of the Egypt Air 990 investigation in cooperation with the FBI and have directed and participated in dozens of intentional acts of unlawful interference against civil aviation, most notably hijackings and bombings of aircraft.

As resource material this paper draws primarily upon the works of two authors: John E. Douglas, Special Agent with the FBI Behavioral Analysis Unit - considered the father of criminal profiling - and Dr. Thomas Joiner - a preeminent authority on the phenomenon of murder-suicide.

Douglas' career as an investigative profiler in the FBI's Behavioral Analysis Unit (BAU) served as the inspiration for the character of Jack Crawford in the motion picture *The Silence of the Lambs*. Douglas' work is contained in *The Crime Classification Manual* (3<sup>rd</sup> edition) by Douglas, Burgess, Burgess, and Ressler and also in Douglas' biography *Mind Hunter*.

Dr. Thomas Joiner PhD is a pre-eminent authority on suicide and murder-suicide in particular. Dr. Joiner's ideas are reflected in *The Perversion of Virtue*, which is solely focused on murder-suicide and his

book Myths About Suicide. Dr. Joiner is a Distinguished Professor of Psychology at Florida State University. This paper also draws from the book Night Falls Fast by Dr. Kay Redfield Jamison. Dr. Jamison is a Professor of Psychiatry at Johns Hopkins University and an Honorary Professor of English at the University of St. Andrews in Scotland.

## DEFINITIONS

*Homicide*- The action, by a human being, of killing a human being. (Etymology; a man-slayer) The Oxford English Dictionary

*Murder* – the unlawful taking of human life. (Douglas, Burgess, & Ressler, 2013, p. 111) . It is first among the commandments “Thou Shalt Not Kill.” It is the most basic crime. The rogue pilot has no right to take the lives of the passengers, therefore this action is, at its most basic level, the crime of murder. And while the death of pilot himself has the effect of muddying the clarity of this realization, we must first and foremost recognize that it is the unlawful taking of human lives. It is a crime. It is murder. What is the good of this realization? It allows us to see parallels with other similar crimes and gives us insights into the minds of those who have committed similar acts.

*Mass Murder* - The unlawful killing of four or more victims by the same offender(s) acting in concert, at one location in a single continuous event that may last minutes, hours, or days (Douglas, Burgess, & Ressler, 2013, p. 16).

*Murder-suicide* - the term that Joiner uses in The Perversion of Virtue to describe, “a murder followed by a suicide.” (Joiner, The Perversion of Virtue: Understanding Murder-Suicide, 2014, p. 14) He explains that, “Given the contingent nature of suicide and murder in these incidents, and given that both are tied together in perpetrators’ mind by a perversion of virtue, it is not surprise that the time interval between murder(s) and suicide is almost always on the order of minutes or hours.” (Joiner, The Perversion of Virtue: Understanding Murder-Suicide, 2014, p. 16). Joiner asserts that “Far from Being Impulsive” murder-suicide is premeditated. This gives us a fundamental conceptual building block upon which to build our understanding of the rogue-pilot incident. It gives us the insight to look for an evolutionary pattern of development and planning in cases here murder-suicide is a potential cause.

*Psychosis* - Psychosis occurs when a person loses contact with reality. The person may: Have false beliefs about what is taking place, or who one is (delusions). (National Institute of Health)

**Table 1: Pilot Initiated Crashes**

<p><b>26 September 1976</b> – 12 fatalities A Russian pilot stole an Antonov 2 airplane directed his aircraft into the block of flats in Novosibirsk where his divorced wife lived.</p>
<p><b>22 August 1979</b> – 4 fatalities A 23 year old male mechanic who had just been fired entered a hangar at Bogotá Airport, Colombia and stole a military HS-748 transport plane. He took off and crashed the plane in a residential area.</p>
<p><b>9 February 1982</b> – <b>JAL 350</b> 24 fatalities, 150 survivors A DC-8 captain pushed the controls forward against the efforts of other flight crew causing the aircraft to crash into Tokyo Bay on approach. The captain was tried and found not guilty by reason of insanity. The captain was found to experience psychotic episodes.</p>
<p><b>13 July 1994</b> – 1 fatality A Russian Air Force engineer stole the aircraft at the Kubinka AFB to commit suicide. The aircraft crashed when there was no more fuel left.</p>
<p><b>21 August 1994</b> – 44 fatalities A Royal Air Maroc ATR-42 airplane crashed in the Atlas Mountains shortly after takeoff from Agadir, Morocco. The accident was suggested to have been caused by the captain disconnecting the autopilot and directing the aircraft to the ground deliberately. The Moroccan Pilot's Union challenged these findings.</p>
<p><b>19 December 1997</b> – <b>Silk Air Flight 185</b> 104 fatalities Silk Air Flight 185, a Boeing 737 en route from Jakarta, Indonesia to Singapore, crashed in Indonesia following a rapid descent from cruising altitude. Indonesian authorities were not able to determine the cause of the accident. It has been suggested by amongst others the U.S. NTSB that the captain may have committed suicide by switching off both flight recorders and intentionally putting the Boeing 737 in a dive, possibly when the first officer had left the flight deck. During 1997 the captain experienced multiple work-related difficulties. NTSB findings were disputed by the Indonesian investigators.</p>
<p><b>11 October 1999</b> – 1 fatality An Air Botswana captain who had been grounded for medical reasons took off in an ATR-42. He made several demands over the radio and finally stated he was going to crash the plane. He caused the plane to crash into two parked ATR-42 aircraft on the platform at Gaborone Airport, Botswana</p>
<p><b>31 October 1999</b> – <b>Egypt Air 990</b> 217 fatalities Egypt Air Flight 990, a Boeing 767, entered a rapid descent some 30 minutes after departure from New York-JFK Airport. This happened moments after the captain had left the flight deck and the relief First Officer had convinced the Command First Officer to relinquish the controls. The NTSB concluded that the accident was a “result of the relief first officer’s flight control inputs. The NTSB conclusions were heavily disputed by Egyptian authorities.</p>
<p><b>29 November 2013</b> – <b>LAM 470</b> 33 fatalities LAM Flight 470 entered a rapid descent while en route between Maputo and Luanda and crashed in Namibia. Preliminary investigation results indicate that the accident was intentional. The captain made control inputs that directed the plane to the ground, shortly after the first officer had left the flight deck.</p>

In addition to the above cited cases, the crash of PSA 1771 should be included. A Los Angeles based employee of Pacific Southwest Airlines (PSA), after having been terminated from his position, used his airline ID to board a flight with a handgun, killed his supervisor who was a passenger, the other pilots, and caused the aircraft to crash with the loss of all souls on board. The case of Fed Ex Flight 705, a DC-10 cargo flight from Memphis, Tennessee to San Jose, California in which a dead-heading pilot attempted a murder-suicide but was prevented by aggressive action by the crew, is very similar and offers the same insight into motivations behind in air killings.

### **INSIGHTS FROM THE PERSPECTIVE OF PROFILING**

In his time with the FBI's Behavioral Analysis Unit S/A, Douglas offered the following metaphor to new investigators striving to learn the art and skill of criminal profiling: "If you want to understand the artist, you have to look at the painting." The painting, for him, stands for all the details of the crime itself. These specifics are significant because of the planned and premeditated nature of most of these incidents. The specifics are planned and chosen and reflect intention

Douglas stresses the concept of Victimology, in that a complete understanding of the relationship between the killer and the victim can often yield insights into the motive or the reason for the action to have taken place. (Douglas, Burgess, & Ressler, 2013, p. 11) Douglas goes on to point out that "Most violent crime careers have a quiet, isolated beginning within the offender's imagination." (Douglas, Burgess, & Ressler, 2013, p. 30)

It has been said that the mass murderer will likely have a very active fantasy life. The role of the internet has fed this. For the purpose of investigation the recognition of this fact could not be more important as "The Internet has meant that old concepts of boundaries and borders and limitations are gone... the Internet seems to have freed something that had previously been repressed in the human mind or the unconscious or the body itself. Self-imposed restriction or controls were fading, and people did things in cyberspace they might have never done anywhere else." (Douglas, Burgess, & Ressler, 2013, p. 39) There is also a feeling of privacy on the Internet. One works and searches the internet as an individual not as a team or social activity. It can be done in private with no one in attendance. One can log in with an assumed name or identity. Working on the internet can create the feeling of absolute privacy but, of course, this is false. Every keystroke is recorded somewhere. The feeling of absolute privacy is ultimately false.

Some investigative organizations use a mental model which can be called "The Three Selves" as a way of looking at the range of an individual's behavior. This model applies to everyone not just those coming under the scrutiny of behavioral profilers. This model posits that each of us can be seen as having "Three Selves." The first is the *social self* which is the person that is known to friends, workmates, and other individuals that we routinely come into contact with. The second is the *personal self* which is only shared with our spouse or closest friends. The third self is the *private self* which is shared with no one. It is often within this private self where the fantasy life exists and the seeds to violent crime grow. The collision between this private fantasy life and the other two external lives can be devastating. In 1998 the US Customs Service broke up the Wonderland Internet child porn ring. Four individuals connected with Wonderland committed suicide shortly after being identified with the ring.

The degree to which individuals can keep this fantasy life and their associated crime secret is notable. In Olathe, Kansas in 2000 a middle-aged man by the name of John Robinson contacted six women via the Internet and after developing a cyber- relationship killed each of them concealing their bodies at farm property that he owned. After his arrest, his neighbors “told the media that he was a quiet fellow who kept a statue of the Virgin Mary in his back yard and always put up wonderful holiday decorations.” His wife and children also stated that he was innocent of the killings. (Douglas, Burgess, & Ressler, 2013, p. 43)

The case of Edmund Emil Kemper “The Co-ed Killer,” who was responsible for 10 killings in the Santa Cruz, California area, is another example of the hidden self. After being released from custody for two murders that he committed as a juvenile he was required to make regular visits to state psychiatrists. One appointment took place the day following one of the murders. Kemper, on this occasion, was pronounced as no longer a threat to himself or others. He was only half-way through his murderous career.

In his book, The Mind Hunter, Douglas recounts the perspective of retired Special Agent Jim Clement of the FBI’s Behavioral Analysis Unit. It was Clement’s view that an individual’s behavior can be viewed as occurring within a spectrum or continuum of behavior and not always within the same narrow band of behavior. (Douglas, Burgess, & Ressler, 2013, p. 9) The point is that but while an individual may seek to keep *their secret self* apart from the other parts of their life there are elements of one that blend with the next and threads that extend through the entire fabric of an individual’s life.

## **MURDER- SUICIDE AS A PERSPECTIVE ON THE ROGUE PILOT**

The Perversion of Virtue is Thomas Joiner’s work that is exclusively devoted to murder-suicide. As we have seen earlier, the Rogue Pilot phenomenon fits the definition of murder-suicide just as it does the definition of mass murder. Not all mass murders are murder-suicides, and not all murder-suicides are mass murders, indeed most are not.

The central idea of Joiner’s work is that in cases of murder-suicides the primary idea and intention of the individual is suicide. He states that suicide “is not only primary, but it is also the source of all that follows, especially including the appalling murders; murder occurs because of suicide, as a consequence of suicide having been settled on.” (Joiner, The Perversion of Virtue: Understanding Murder-Suicide, 2014, p. 9)

Joiner states that the thinking of the individual reflects the feeling that “If I am to die it is only virtuous that they do too.” (Joiner, The Perversion of Virtue: Understanding Murder-Suicide, 2014, p. 9) This is the perversion of the virtue of justice. It is Joiner’s belief that once an individual fixes upon suicide as the answer to two predominant conclusions “I am just a burden upon those that I care about” and “I really don’t belong.” As this line of thinking repeats over time and comes to suicide as the only answer it may seek to justify the suicide by the murder of others. It may seek to justify the murders by seeing them as a virtuous act and necessary act.

Joiner cites four virtues that he believes are operative in cases of murder-suicide: justice, glory, mercy, and duty. In the case of the Virginia Tech University shootings Korean student Seung-Hui Cho’s actions can be seen as a result of perversion of justice thinking. Cho viewed his peers as “deceitful charlatans,” and “rich kids” who engaged in “debauchery.” (Joiner, The Perversion of Virtue: Understanding Murder-

Suicide, 2014, p. 162) Joiner points out that in the eyes of the individual enacting murder-suicide, his actions are not “cowardly, vengeful, or selfish.” They are instead following a compelling path resulting from a perversion of justice.

Copycat behavior can be seen in two of the most famous murder-suicides. In the Columbine High School murder-suicides Eric Harris and Dylan Klebold killed 13 people before losing their lives to the police. In this incident they sought to achieve greater infamy than Timothy McVeigh who killed 168 in the Oklahoma City bombing of the US Federal Building. (Joiner, *The Perversion of Virtue: Understanding Murder-Suicide*, 2014, p. 172) Similarly, Charles Whitman, on the same day that he heard the news that Richard Speck had just killed eight nurses in their Chicago dormitory, visited the Bell Tower of the University of Texas. Later that month he killed 13 people and wounded 31 shooting from that same tower. (Douglas, Burgess, & Ressler, 2013, p. 475) Joiner argues convincingly that because of extreme difficulty in killing ones’ self, suicides, and murder-suicides are not impulsive or spur of the moment.

How common is murder-suicide? In 24 samples conducted in the US, the range varied from 0.17 – 0.55 murder-suicide incidents per 100,000 population or a mean value of 0.32 per 100,000. According to the Boeing 2013 Statistical Summary the ten year combined commercial accident rate was 0.33 per 1,000,000. So, while being a rare phenomenon a murder-suicide incident is ten times more frequent than a commercial aircraft accident. To put an even finer point on it, Joiner estimates that there are 1,574 deaths per year due to murder-suicide in the U.S. A ten-year average of commercial aviation fatalities in the US from 2003-2012 was 15.3 per year, one one-hundredth of murder-suicide fatalities. And in recent years in the US (2009-2011) there were no commercial aviation fatalities. Clearly incidents of murder- suicide are hundreds to thousands of times more frequent than commercial aircraft accident fatalities (Side note: there are approximately 38,500 deaths by suicide annually in the US. Murder-suicides account for 2% of the total. Side note 2: It should be pointed out that over 90% of those who commit murder-suicide are men. (Joiner, *The Perversion of Virtue: Understanding Murder-Suicide*, 2014, pp. 41 - 43)

It is also important, however, to point out that the individual committing murder-suicide, according to Joiner, is generally not a psychopath. “One of the main features of the psychopathic personality is a callous, unempathetic, and uncaring emotional style. Extreme selfishness is also involved.” (Joiner, *The Perversion of Virtue: Understanding Murder-Suicide*, 2014, p. 68)) This is not the murder-suicide profile which sees himself within the context of performing a virtuous act.

The element of life-insurance fraud is encountered in several murder-suicides including some in aviation. In the Fed Ex Flight 705, the dead-heading crew pilot took out a \$2.5 million dollar life insurance policy prior to the attack. Similarly, the pilot of Silk Air Flight 185 had been experiencing financial difficulties and took out a life insurance policy before the ill-fated flight.

Finally, the absence of a suicide note means virtually nothing in the course of a murder-suicide investigation. “Three-quarters of those who die by suicide do not leave a note.” Studies conducted on the subject range from 0% to 40% of suicides that leave notes, the average being about 25%. (Joiner, *Myths About Suicide*, 2010, p. 119) A suicide note was found however among the wreckage of PSA 1771: *Hi Ray. I think it's sort of ironical that we end up like this. I asked for some leniency for my family. Remember? Well, I got none and you'll get none.*

Joiner also points out something that can strike us as contradictory. People can conduct activities that indicate that they are planning for the future and also be planning on dying. (Joiner, Myths About Suicide, 2010, p. 65) Joiner says this later in when he states “attention and emotion do not always operate in lockstep.” (Joiner, Myths About Suicide, 2010, p. 128) What does this mean to us as investigators? Simply, it means that just because an individual has paid for a vacation holiday next month, it is not assured that he will not make a fatal decision today.

## INVESTIGATIVE TOUCHSTONES

While almost all of the forgoing can be useful in investigating potential cases of murder-suicide by the pilot, there are several points that can serve as fundamental touchstones.

First is the primacy of suicidal intention that precedes many if not most murder-suicide acts. (JAL350 is noted as an exception, psychosis/delusions on the part of the captain.)

Second is the role of fantasy and imagination in the evolution of the murder-suicide intention.

Third is the internet and all high tech opportunities for the individual to indulge and develop the fantasy/*secret self*. The subject’s computer, phone, and chat room activities are the DFDR’s of this kind of investigation. Methods of payment: credit cards and debit cards provide an individual’s movements and a reflection of the individual’s value system. Social media provide links to individuals who may prove to be productive witnesses.

Fourth is the understanding that individuals who develop a secret/fantasy life are adept at keeping them hidden. Neighbors, families and even psychiatrists (in the case of Edmund Emil Kemper) can be fooled.

Fifth is that pilots, by virtue of their work, can live in several places at the same time. Their home may be in one city but they may visit another city with regular frequency. They may be essentially another person in another city.

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