

# The Ford Motor Fix, Failed to Fix the Cruise Control Problem

by David Yarosh, Attorney at Law



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In November of 2008, a fire occurred in the garage of a home located in rural Cold Spring, Minnesota. At the time of the fire, the homeowner's 1999 Ford F-150 was in the right (east) stall of his two-car garage, where it had been parked without being driven for four days. No vehicle was parked in the left stall of the garage. The insured had several battery-operated power tools in the bed of his Ford F-150 as well as a couple of propane tanks, gas cans filled with gas, and a propane heater stored in the garage at the time of the fire. Only the cords for two separate garage door openers and an overhead light were plugged in outlets in the garage at the time of the fire. The fire consumed the entire garage and a portion of the attached residence. The smoke, soot and toxins from the fire resulted in the destruction or replacement of virtually all of the contents contained within the garage and

residence and prevented the insured from returning to his property for nearly 8 months while his new home was being built.

The homeowner's insurer retained Brian Haag, CFI of Whitmore Fire Consultants, Inc. to investigate the origin and cause of the fire. Investigator Haag arrived at the residence in late November 2008 and found the scene noted below. Not only had the Ford F-150 been severely burned from bumper to bumper, but most of the north wall, as well as the entire east wall of the garage had collapsed during the fire. The two aluminum garage doors located at the south end of the garage had also been con-



sumed by the fire. The difficulty of determining the fire's origin was compounded by the fact that there had been at least three rekindles of the original fire

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which occurred inside the engine compartment of the F-150. As the entire garage and only the eastern part of the attached residence was burned by the fire, investigator Haag preliminarily concluded that the origin of the fire was somewhere in the garage. As his investigation turned toward the garage, he found that a significant amount of the attic's structural materials and insulation had dropped onto the F-150 and floor of the garage during the fire. Further complicating his origin opinion was the fact that the consumption of the garage doors during the fire likely provided ventilation for the fire from the south, creating burn patterns that at first blush appeared inconsistent with a vehicle origination. Nonetheless, the significant charring of the structural members of the remaining north wall of the garage coupled with the collapse of the walls comprising the northeast corner of the garage focused investigator Haag's investigation toward the northeast corner of the garage at or near the front end of the Ford F-150. He then examined the engine compartment of the F-150 and, while many of the burn patterns had been obscured due to the intensity of the fire, drop down from the attic materials and ventilation from the collapsed walls and garage doors, the totality of the patterns led him to opine that the fire originated in the driver's side engine compartment of the F-150 near the area of the master cylinder. Investigator Haag then arranged for a tarp to be placed over the front end of the F-150 and the surrounding area of the garage floor in order to preserve the area of origin for future investigation.

Investigator Haag returned to the fire scene a couple weeks later along with John Pagels, an electrical engineer retained by the homeowners carrier. Engineer Pagels was brought in not only to rule out any electrical wiring or other electrical components in the garage as a cause of the fire, but also to examine the remains of the engine compartment of the F-150 in order to determine whether there was an electrical cause for the fire to be found within investigator Haag's defined area of origin. Fortunately, investigator Haag had properly preserved the area of origin, as 8 inches of fresh snow had to be removed from the tarp covering the F-150 and surrounding garage floor prior to this inspection.

During his investigation, engineer

Pagels found that there was no wiring within the north or east walls of the garage that could have caused the fire, and otherwise ruled out any other electrical cause for the fire within the garage structure. His examination of the engine compartment of the F-150, however, revealed internal wires along the top of the brake booster that showed signs of melting/arcing indicative of failure. He found no other electrical evidence of the cause of the fire during this inspection. Knowing that several Ford model vehicles had been recalled due to a defect within the Speed Control Deactivation Switch (SCDS), coupled with their knowledge that this switch was installed by Ford at the master cylinder of the Ford F-150, investigators Haag and Pagels searched for any remains of the SCDS which may have survived the fire. They were able to find one component of the switch on the garage floor underneath the driver's side engine compartment, the "hexport," which is made of cast iron steel. They therefore retained the hexport and other fire debris from the area of origin for further examination. They did not search for, or retain, the remains of the propane tanks, gas cans or propane heater that had been in the garage at the time of the fire, as these items were outside the area of origin as determined by investigator Haag.

The function of the SCDS is to deactivate the cruise control during driving by pressing the brake pedal. The SCDS is a small component consisting of a hydraulic section which

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pumps brake fluid into the switch via the hexport when the brake is pressed, causing the copper contacts contained within the electrical section of the switch to open and deactivate the cruise control. A synthetic "Kapton Seal" separates the hydraulic and electrical portions of the switch. Over time, this seal can crack due to vacuum pressure applied when braking, thus allowing brake fluid to enter the electrical portion of the switch. This event has been found to cause fires due to the overheating which occurs when the copper contacts of the switch become contaminated and corrode from exposure to brake fluid. As the SCDS is always energized, fires resulting from a failed SCDS often occur when the car is parked and the engine is off. Ford ultimately recalled over 14 million vehicles due to the propensity of the SCDS to cause fires. With respect to the 1999 Ford F-150, the recall "fix" was to install a wire harness with a 2-amp fuse into the same circuit as the switch, thus limiting the current flowing into the switch to no more than 2 amperes (24 watts of power). Ford did not replace the original switch as part of this recall fix. In this case, the insured re-



ceived a recall notice from Ford and did have the 2-amp fused jumper harness installed by a local Ford dealer in March of 2006, approximately 2 1/2 years prior to the fire.

The above evidence convinced Yost & Baill and its experts that the fire

was caused by the defective SCDS, notwithstanding the 2-amp fuse "fix" designed by Ford Motor Company. Even though Ford did not have a representative attend the fire scene investigation and no alternative cause for the fire was presented, the case did not settle.

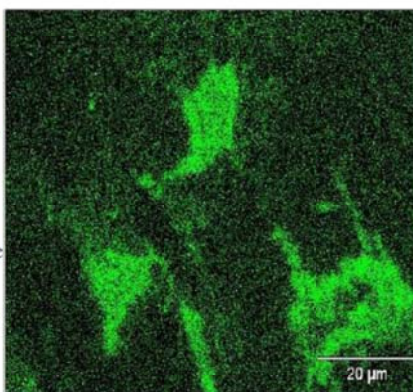
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Yost & Baill thus commenced suit on behalf of the homeowners carrier and its insured seeking reimbursement of the damages paid by the carrier, as well as for out-of-pocket expenses incurred by its insured. Ford defended the case by asserting that the 2-amp jumper harness "fix" pursuant to the recall cured the problem with the defective SCDS and thus the SCDS could not have caused the fire. While the local dealer that installed the switch was initially a named defendant in the suit, the parties agreed to dismiss the dealer as the evidence in the case revealed that the dealer correctly installed the 2-amp fused jumper harness per Ford's specifications during the recall work performed in 2006.

Ford took a "no holds barred" approach to the litigation, conducting voluminous discovery of its own, as well as inundating Yost & Baill with literally tens of thousands of documents in response to its discovery requests. During depositions, Ford's counsel insinuated that investigator Haag's and engineer Pagels' focus on the SCDS as the cause of the fire skewed their investigation with respect to other possible ignition sources that were in the garage at the time of the fire. While the physical evidence was strong, the lack of clear burn patterns in the F-150's engine compartment and the dearth of scientific research regarding the possibility of the SCDS igniting fire with as little as 2 amps of current were a concern to Haag

and Pagels. On the other hand, Ford did not produce any testing that it or any other entity performed which showed that the installation of the 2 amp fused jumper harness was a fail-safe "fix" of the known SCDS defect. When the case still did not settle at mediation, Yost & Baill was advised that Ford was bringing in its national counsel from Michigan to try the case. Prior to trial, Ford filed 17 separate motions in limine (Yost & Baill filed five) in an effort to limit or exclude evidence at trial. The case was ultimately tried to a jury in St. Cloud, Minnesota with David Yarosh of Yost & Baill acting as lead trial counsel.



Above photo is a SEM shot of the hexport showing the copper deposits in green, which was key to the case.

During trial, attorney Yarosh called Brian Haag, John Pagels and Larry Hanke, a metallurgist to testify as expert witnesses along with Jeff Morrill, a certified fire investigator out of Atlanta, Georgia who specializes in the investigation of SCDS fires. However, as this case arose out of a fire that occurred after the 2 amp fused jumper harness was installed per the recall, the trial court judge significantly limited investigator Morrill from testifying as to his past experiences investigating SCDS fires. This case thus turned on the physical evidence obtained from the scene and metallurgical examinations, and testimony elicited from the experts. Investigator Haag was the first expert to testify, candidly explaining the difficulties of determining a conclusive area of origin in a fire of this magnitude. While he agreed with opposing counsel that "drop down" from the attic and the rekindles that occurred could obscure burn patterns, investigator Haag nonetheless held firm regarding his opinion that the totality of the burn patterns led to an origin of the fire at the driver's side engine compartment of the F-150. He also explained that he did not look for or retain any remains of the propane tanks, heater, gas cans or tools that were in the garage at the time of the fire as none of these items were in the area of origin or were otherwise ignition sources in and of themselves.

Engineer Pagels testified that his fire scene investigation allowed him to rule out any and all potential electrical causes of the fire within the garage structure, and that the melting/arcing found on the wires draped along the brake booster were consistent with investigator Haag's opinion that the fire originated within the driver's side engine compartment of the F-150. He further testified that the finding of copper on the hexport of the SCDS by metallurgist Hanke was strong evidence of the SCDS being the cause of the fire. While on cross-examination, engineer Pagels acknowledged that he was unaware of any specific testing revealing the minimum amperage needed to ignite a SCDS, he did state that the combination of time, elements, and contamination leading to dendritic (branch-like) growth of oxides within the electrical section of the SCDS could cause



Just recently, a court decision pertaining to Ford Motor Company SCDS recall "fix" was determined not to have "fixed" the problem. This is a landmark decision on behalf of all insurers. I want to congratulate Brian Haag, CFI of Whitmore Fire Consultants, Inc., John Pagels, of Pagels Engineering, Larry Hanke of Materials Evaluation & Engineering, Inc. and David Yarosh of Yost & Baill for the outstanding job they did in preparing for and presenting this case for trial. This was a collaborative effort by all experts and legal counsel that had a very positive result on behalf of the client. It is our goal and commitment

to each of our clients to provide the same diligent approach to their investigation needs.

We are proud of our commitment and contribution to this investigation and are pleased with the decision in our client's favor.

Congratulations to all involved. Great job!

Robert B. Whitmore, CFI  
President  
Whitmore Fire Consultants, Inc.

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### *The Ford Motor Fix, Didn't Fix the Problem >>>*

heating sufficient for ignition despite only 2 amps flowing through the switch. This testimony was in stark contrast to the opinions of Ford's one and only expert, Mark Hoffman, a "Design Analysis Engineer" employed by Ford for over 30 years. Engineer Hoffman pointed to several components within the engine compartment at or near the master cylinder which, in his opinion, should have shown deeper burning or even been destroyed had the fire started at the SCDS. However, he admitted during cross-examination that "drop down" and ventilation (as testified to by Brian Haag earlier in the trial) could have played a role in the lack of burning of these components. Engineer Hoffman also failed to address the key issues of the melting/arcing on the wiring draped across the brake booster or the source of the copper found on the hexport face. While he testified that it takes "20 to 30 amps" of current to get an SCDS to fail, no testing or other documentation was introduced by Ford to support this assertion. In fact, engineer Hoffman testified upon cross examination that it is "possible" for an electrical component that has been properly fused to nonetheless fail in some circumstances.

After four days of trial and approximately 2 hours of deliberations, the jury returned a verdict in favor of the Plaintiff. Specifically, they found that the "product" (SCDS with 2 amp fused jumper harness) was defectively designed, that this defective design caused the fire at the insured's residence, and awarded 100% of the claimed damages. As Yost & Baill filed an offer of judgment before trial which was less than the jury's verdict, Plaintiff is entitled to recover double its trial costs above and beyond the jury verdict. This is the first and only verdict in the country of which we are aware finding Ford Motor Company liable for a fire and resulting damages due to a defective SCDS where the recall "fix" had been performed.

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