Sample/Chapter 20

(Vindicated)

The 55th Wing and a Prayer

A Whistleblower's Story

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About the Cover:

During the month of June 2018, the *Omaha World-Herald* published a three-day investigative series exposing aircraft maintenance deficiencies of the 55th Wing, located at Offutt AFB in the State of Nebraska. Illustrations accompanying the series were drawn by editorial cartoonist Jeffery Koterba.

On 18 July 2018, the Secretary of the Air Force responded to an inquiry from Nebraska legislators, dismissing the data compiled by investigative reporter Steve Liewer. Subsequently, on 19 July 2018, the Omaha World-Herald published an editorial cartoon drawn by Jeff Koterba, presenting a hyperbolic view of the C-135 variants maintained by the 55th Wing.

Jeffrey Koterba is an American editorial cartoonist based in Omaha, Nebraska. He was an editorial cartoonist for the Omaha World-Herald from 1989 to September 2020. His work is syndicated nationwide to over 850 newspapers by Cagle Cartoons. Wikipedia

Also see Lawmakers Call for Safety Checks After C-135 Failures at Offutt

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(Last Entry, July 2023)

George G. Sarris

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Note: A Freestyle of editing has been applied to this manuscript. For the benefit of the reader, editorial discretion of citations and official reports may have been applied without altering the intended meaning of the original sources.

Foreword

The hunt for Osama bin Laden was well underway when I blew-the-whistle on the 55th Wing for operating a fleet of reconnaissance aircraft that were not airworthy. The RC-135 fleet was plagued with in-flight emergencies, ground aborts, air aborts, and ineffective missions due to substandard maintenance practices.

The impact that my disclosures had on the Global War on Terrorism may never be known, but it was clear that I had embarrassed the Agency. Military managers and defense department officials employed the use of harassment, intimidation, and reprisals to keep me in check. Ultimately, my disclosures were validated.

You are about to read a series of events that demonstrate the degrading evolution of an excellent and highly experienced military aircraft mechanic of thirty years, to the point of being just as negligent as the managers masquerading as leaders.

These events take place at Offutt AFB, Nebraska, home to the USAF's 55th Wing. The aircraft involved are managed by programs with code names such as Big Safari, Combat Sent, Constant Phoenix, and Open Skies. These are highly specialized intelligence-gathering aircraft vital to the security of the United States and its allies.

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Chapter 20

Vindicated

The *Omaha World-Herald* performed the investigation that the DOD and the OSC should have performed years earlier when I blew-the-whistle. The World-Herald's three-year investigation gave me access to several thousand Air Force documents. We cross-referenced the information utilizing dates, tail numbers, job control numbers, safety center incident numbers, handwriting, and other forensic techniques. A major source of information came from the "Pilot Reported Discrepancies"— but there was nothing to compare this information to. Then, in 2016, the Tampa Bay Times published an aircraft maintenance report based on FAA records of the airline industry.

The Tampa Bay Times determined that Allegiant Airlines had the worst maintenance record of all US airlines and was four times more likely to make unexpected landings due to midair mechanical problems. After crunching the numbers, reporter Steve Liewer determined that the C-135 variants of the 55th Wing were forced to cut short flights because of mechanical problems at a rate of 330 per 10,000 flights. "That's 110 times the rate of commercial airlines generally, and nearly 30 times the rate of Allegiant Airlines."[85] (Click Here)

Using the Allegiant Airlines benchmark as a comparison, the editorial staff of the *Omaha World-Herald* became comfortable with the story that Mr. Liewer had been working on for the past three years. On 23 June 2018, the *Omaha World-Herald* published the first story of a three-day series titled, "In-flight emergency: An investigation into flight safety at Offutt's 55th Wing". (Click here)

The conditions I had reported to Congress in 2007 thru 2008, were corroborated by the data compiled by Steve Liewer. The *Omaha World-Herald* created a searchable database of inflight incidents involving the C-135 variants maintained by the 55th Wing. The database is available in part two of the three-day series, "Risking disaster: Offutt's aging jets are breaking down at sky-high rates".

I can think of only one way to describe to the general public exactly how poorly maintained these aircraft are. So, I'll start with something every human being can understand — human waste.

[85] Ref: Steve Liewer, *Omaha World-Herald*, 26 June 2018.

Aircraft Lavatory

Some aviation maintenance problems present more of a mission inconvenience rather than a serious mechanical flaw. Just the same, a mission inconvenience can sometimes mean the difference between success and failure. One such very important subject is the aircraft lavatory.

Early RC-135s consisted of all male crewmembers. Urinals were located in the forward and aft sections of the aircraft. When women entered the airborne career fields, airline-style lavatories became necessary. In 2005, the RC-135 fleet completed a series of upgrades, at which time the aft urinals were replaced with an airline-style lavatory. One of the first aircraft modified with an airline-style lavatory was RC-135W 62-4134.

Aircraft 62-4134 deployed to a desolate region in support of real-world military operations. After arriving on station, the lavatory malfunctioned. Every time the toilet was flushed, blue water[86] ran out the bottom of the aircraft. Throughout a mission, and depending on the number of times it was flushed, the water level in the toilet was sometimes depleted. After each flight, maintenance personnel experienced copious amounts of blue water dripping off the underside of the aircraft. Rather than investigating the source of the malfunction, maintenance personnel continued to refill the system, day, after day.

The work stations toward the back end of the aircraft, where the lavatory is located, became very undesirable positions for the mission crew. The stench was comparable to that of an unclean Porta-Potty on a hot, windless day.

Blue water had seeped into the carpet and structural joints of the aircraft, providing the perfect environment for a chemical corrosion process. While in flight, the leaking blue water ran the remaining length of the aircraft, working its way into additional mechanical systems. The maintenance plan was to continue operating the aircraft with the blue water leak until it could be repaired by Depot maintenance. Therefore, maintenance personnel entered a delayed discrepancy into the aircraft's AFTO Form 781K.

When aircraft 62-4134 returned to Offutt AFB for a routine scheduled ISO inspection, I crawled into the lower aft section of the aircraft just to look around. (In a KC-135 Tanker, this area is known as the, "boom pod".) Upon sensing the piss-water odor, I developed a gag reflex and nearly upchucked.

In addition to seeping into the aircraft's carpet and structure, the blue water had also leaked onto the LOX converters and electronic equipment. In less than a minute, I spotted

[86] Blue water: Chemically treated water, usually blue in color, commonly used in portable lavatory systems such as Porta-Potties.

something that didn't belong. My eyes focused on a black, convoluted hose whose end was tucked in behind a longeron.[87] Any mechanic with a basic understanding of mechanical systems should have been curious as to why a hose would terminate in this location.

My curiosity was dead on! The convoluted black hose had blown off of the lavatory connection and came to rest under the floor, with the open end tucked behind a longeron. I found the hose clamp, which was in perfect condition, under a shelf that supported some electronic equipment. I made the repair in less than five minutes by reinstalling the hose and clamp with a simple device called a flathead screwdriver.

As easy as this was to see, and as easy as it was to repair, I have to wonder how devoted some of our military's best mechanics really are.

The frequency of such an occurrence is alarming. If the mechanics can't repair a simple leak in a lavatory, how can they be expected to repair a major aircraft subsystem?

The following data is compiled from the 55th Wing C-135 "Pilot Reported Discrepancies" (2014 thru 2017). The numbers in parentheses ( ) represent the job control number assigned to that particular discrepancy. **REDBALL** is a term used by the US Air Force, typically on the flight line, to identify supply or service requests that are needed urgently to avoid mission failure, and thus given highest priority.

Pilot Reported Discrepancies (2014 thru 2017)
Lavatory / Urinal /Blue Water/Honeypot

Aircraft 125

(140080207) AFT LAV WILL NOT FLUSH

(140150220) AFT LAV WILL NOT DISCHARGE WATER TO FLUSH. MOTOR IS RUNNING & LAV WILL FLUSH WITH WATER FROM A JUG

(140230145) AFT LAV LEAKING INTO RECON CREW COMPARTMENT

(141670151) AFT LATRINE VANITY LIGHT COVER BROKEN REQ'S R2

(142110065) AFT LATRINE HAS REDUCED FLUSH; HOT MOTOR SMELL WHEN FLUSHED

(150420129) URINAL LEAKING FROM TOP CONNECTION WHERE URINAL BOWL AND TUBE CONNECT

(150690220) AFT LAVATORY IS OVERFLOWING IT IS SO FULL. REQUIRES SERVICE

[87] Longeron or stringer: A thin strip of wood, metal, or carbon fiber, to which the skin of the aircraft is fastened.

Aircraft 127

(140630177) LAV WILL NOT FLUSH
(140630179) URINAL LIGHT INOP
(150830177) LAVATORY LTS CB POPPED DURING PREFLT & AGAIN INFLT
(153210146) LAV AND TRASH NEED SERVICED
(153480140) TOILET SHROUD REMOVED BY LAUNCH CREW
(160210183) SMALL PIECE OF METAL FOD IN FRONT URINAL
(162040126) FT LAV DOESNT FLUSH
(162150142) LIGHT ABOVE URINAL BY CARGO DOOR INOP
(170170153) AFT LAV LEAKING ONTO CARPET
(170200062) LAV INOP, LEAKING

Aircraft 128

(141120031) URINAL LEAKS
(151410139) LAV LEAKING BLUE WATER
(160260186) AFT LAV LIGHT IS BURNED OUT
(160260188) AFT URINAL JUG SWITCHEIN/CROSSOVER VALVE IS BROKE & LEAKS URINE BEFORE IT GETS TO THE HOSE

Aircraft 129

(141470147) LIGHT ABOVE URINAL INOP
(153230059) AFT LAV LATCH BROKEN AND REMOVED AWAITING HIGHER MAINTENANCE
(161720136) FORWARD URINAL LIGHT INOP
(162380130) FORWARD URINAL WILL NOT DRAIN
(163260360) FORWARD URINAL WOULD NOT DRAIN
(160140253) AFT LATRINE WILL NOT FLUSH REQ NEW MOTOR
(160140254) AFT LATRINE DOOR IS MISSING EXTERIOR HANDLE
(161240133) FWD LAV LIGHT INTERMITTENT
(170620204) AFT LAV WILL NOT FLUSH
(170940143) FORWARD URINAL WILL NOT DRAIN
(171020150) URINAL BEHIND FLIGHT DECK DOES NOT DRAIN
(171080187) FWD LAV INSERVICEABLE/DOES NOT DRAIN
(171290313) FORWARD URINAL DRAIN WOULD NOT DRAIN
(171650150) FWD LAV LIGHT INOP

Aircraft 130

(140460020) URINAL WILL NOT DRAIN
(142220023) LAV LEAKS ONTO GALLEY FLOOR
(143510140) FORWARD URINAL LEFT SIDE OF DRAIN VALVE LEAKS. WHEN RT SIDE SELECTED...NO LEAK

(151080044) AFT LAV REQUIRES SERVICE. IT SMELLS REALLY BAD
(151790102) URINAL LEAKS
(151820070) URINAL LEAKS ABOVE THE VALVES. TRIED MULTIPLE VALVE SETTINGS, LEAK STILL OCCURED.
(152459616) **REDBALL** AFT LAV LEAKING
(152640173) AFT LAVATORY FULL/BACKED UP
(152440094) FORWARD URINAL DRAINS SLOW
(153000187) AFT LAV IS LEAKING ALL OVER THE BACK OF THE JET. FROM ABOUT OP 15 TO THE CARGO NET IS COMPLETELY SOAKED
(153353800) **REDBALL** AFT LAVATORY LEAKING
(153480198) URINAL DOES NOT DRAIN
(162340018) RIGHT URINAL VALVE DOES NOT DRAIN
(162450202) AFT LAV LEAKING INTO HELL HOLE, POOLING UNDER LOX BOTTLES
(162530062) AFT LAV LEAK, BLUE WATER MARK SPREAD ON CARPET OUT ABOUT 1 FOOT FROM LAV
(163240040) FRONT LAV LEAK

Aircraft 131
(143210226) EMERGENCY EXIT SIGN ABOVE THE LAVATORY HAS COMPLETELY DETACHED
(150980093) FORWARD LAV LIGHT INOP
(151470053) URINAL WILL NOT DRAIN
(152630035) FRONT URINAL INOP
(161310047) FWD URINAL WERY SLOW TO DRAIN
(161530144) FWD URINAL AREA NEEDS CURTAIN INSTALLED
(161880211) FWD URINAL LID HINGE BROKEN
(162940017) FORWARD URINAL DOES NOT DRAIN
(163460016) LAVATORY FILLED 8.0 HRS INTO SORTIE. NEED SERVICING
(163550032) LAV WILL NOT FLUSH. MOTOR RUNS WHENS THE FLUSH BUTTON IS PUSHED BUT NO WATER FLOWS IN TO PUSH THE FLAPPER OPEN
(170060089) LAV LEAKING

Aircraft 132
(140760156) FORWARD URINAL BOTTOM CLIP IS BROKEN
(141560231) FWD URINAL LIGHT SWITCH CAUSES RAVEN AREA LTS BREAKER TO TRI P OFF
(141760083) FWD URINAL LIGHT INOP

(142230050) FORWARD URINAL LEAKING WHERE SEATED ON WALL
(142280040) URINAL LEAKS FROM BOTTOM OF BOWL--DID NOT USE
(143570162) FORWARD URINAL WILL NOT DRAIN
(151000068) ACFT LAV REQ 2 SCREWS IN UPPER DOOR HINGE REPLACED
(151060123) FORWARD URINAL WILL NOT DRAIN TO THE LEFT TANK
(151110130) FORWARD URINAL WILL NOT DRAIN TO THE LEFT TANK AND DRAINS VERY SLOWLY TO THE RIGHT TANK
(152440121) URINAL LIGHT INOP
(171660159) PANEL FELL OFF OF LAV DOOR.
(173000109) KNOB ON LAV DOOR FALLS OFF
(173130113) BLUE FLUID COMING FROM LAV SINK
(173240076) FRONT LAV NOT DRAINING FLIGHT. SUSPECT A THICK BLOCK IN META L "Y" TRIED METAL WIRE DURING FLIGHT WHICH DID NOT WORK.
(172430220) FORWARD URINAL WILL NOT DRAIN

Aircraft 133

(140650215) FORWARD LAV UNINE BUCKET CONNECTORS WERE REMOVED. REPLACEMENT REQUIRED
(142590238) FORWARD URINAL DRAIN TUBE NOT SEATED
(143170201) AFT URINAL LEAKING
(143440206) FRONT URINAL VALVE LEAKS
(150290128) AFT LAV IS LEAKING
(150650156) FORWARD URINAL LEAKING AT VALVE BETWEEN BOWL AND TANK
(152400301) AFT LAV WILL NOT FLUSH
(152990168) LAV REQ SERVICE
(153160173) FWD URINAL LEAKS FROM CONNECTION AND DOES NOT DRAIN
(160110198) FORWARD URINAL LEAKS UNCONTROLLABLY
(160120108) FWD LAV LEAKS, BLUE LIQUID COVERS FLOOR.
(160759615) **REDBALL** AFT LAV LEAKS
(163060081) FORWARD LAV LIGHTS INOP IN BOTH POSITIONS.
(163280161) AFT LAVATORY WOULD CONTINOUSLY FLUSH. ONLY WAY TO MITIGATE WAS TO DISCONNECT CANNON PLUG FROM FLUSH SWITCH TO MOTOR
(170230130) FORWARD URINAL IS LEAKING
(170730190) FORWARD URINAL DRAIN HOSE DISCONNECTED

(171930118) AFT LAV INOP. LAV CAME APART DURING + .2 G EVENT.
(172089615) MAIN BATTERY SHOWING 11 AMPS & HOT ODOR COMING FROM FWD LAV
(172710322) ELECTRICAL PANEL COVER NOT ATTACHED IN FORWARD LAV. DANGEROUS WIRES EXPOSED.

Aircraft 134

(152810124) ACFT LAV EMERGENCY EXIT PLACARD REQUIRES ENHANCED ADHESIVE
(160260015) AT LAV TOILET SEAT BROKEN
(160120121) URINAL FLAP COVER BROKEN
(161300157) URINAL IS EXTREMELY SLOW TO DRAIN
(162160086) FWD URINAL DOES NOT DRAIN
(162730010) TOILET WAS LEAKING BLUE WATER
(162880132) AFT LAV TOILET BOWL WOULD NOT FLUSH WATER OUT, FOR MOST OF THE FLIGHT WATER LEVEL IN BOWL WAS 1/2 FULL, WOULD NOT DRAIN OUT
(162980092) FORWARD URINAL DOES NOT DRAIN
(163250054) WHEN TESTING FWD URINAL W/WATER BOTTLE FWD URINAL LEAKS ONTO FLOOR LOOSE COUPLER
(170030044) LAV SLOWLY LEAKING
(171560275) FORWARD LAV WON'T DRAIN.
(171580131) LAV WILL FLUSH BUT PRESSURE IS LOW.
(172900221) AFT LAV HANDLE REQS SET SCREWS
(170160017) LEFT HOSE OF THE FRONT URINAL DOES NOT DRAIN
(170270131) FORWARD URINAL WILL NOT DRAIN
(170440040) FWD URINAL DRAINS SLOWLY
(171360127) FRONT URINAL DRAINS EXTREMELY SLOWLY
(171670101) FORWARD URINAL DOES NOT DRAIN.
(172960031) FORWARD URINAL FAILS TO DRAIN
(173000015) FORWARD URINAL WILL NOT DRAIN

Aircraft 135

(140420134) LIGHT IN FRONT URINAL DOESN'T WORK
(140590140) FRONT URINAL DOES NOT DRAIN
(140860154) AFT LATRINE TOILET SCREW REMOVED FROM A/C, WILL NOT STAY IN PLACE
(141120181) AFT LAVATORY OVERHEAD LIGHT INOP ON GROUND, & FLICKERING THROUGHOUT

(142430035) FORWARD URINAL LEAKS FROM CONNECTION W/LEFT JUG. RIGHT JUG CHECKED GOOD
(142430042) AFT LATRINE FAILED TO FLUSH DURATION OF FLIGHT
(143140097) AFT LAV DOOR IS NOT ATTACHED TO ITS UPPER TRACK
(151330119) AFT LAV FULL AND UNUSABLE
(152020023) AFT LATRINE WILL NOT FLUSH
(152440084) FRONT URINAL DOES NOT DRAIN
(152800109) FORWARD URINAL BULKHEAD PANEL'S VELCRO IS SEPARATING FROM BULKHEAD AND THE PANELS
(160190092) LAV DOOR LATCH BROKEN
(160270167) AFT LAV DOOR LOCK IS BROKEN
(160930031) AFT LAV DOOR LATCH STUCK/BROKEN.
(160970090) AFT LAV LATCH BROKEN/STICKS
(161700054) FORWARD URINAL HAS LARGE CORROSION AND ALLOWS SMELL TO RELEASE WHEN LID IS CLOSED
(162730067) INTERIOR LAVATORY DOOR HANDLE REMOVED INSIDE

Aircraft 138

(141690108) URINAL DOES NOT DRAIN
(141900074) FWD URINAL INOP
(142830101) URINAL GASKET DELAMINATED
(150700121) FORWARD URINAL VERY SLOW TO DRAIN
(150830190) FORWARD URINAL WILL NOT DRAIN
(152520159) LIGHT ABOVE URINAL NEXT TO RAVEN STATION INOP
(160250142) ACFT LAV UNABLE TO FLUSH PROPERLY
(162020027) FRONT URINAL IS LEAKING. DO NOT KNOW WHERE THE LEAK IS
(162130081) TOILET INOP FLUSH/PUMP BROKEN
(171360151) FORWARD URINAL LIGHT WON'T TURN ON.

Aircraft 139

(140360006) LAV WAS USED/FRONT URINAL IS ALSO NOT DRAINING PROPERLY
(141130209) FRONT URINAL SLOW TO DRAIN
(141460018) FWD URINAL DRAIN IS OBSTRUCTED BY RUST CRUMBLING FROM THE UR INAL CAP HINGE
(141490077) URINAL WILL NOT DRAIN
(141560251) URINAL BOWL IS FULL AND DOES NOT DRAIN

(150030050) FRONT URINAL WILL NOT DRAIN
(150400218) AFT LAV DOOR BROKEN, WON'T SHUT
(151400168) FORWARD URINAL DOES NOT DRAIN
(152670189) TOILET SEAT IN LAVATORY BROKEN AND DISCONNECTED FROM SEAT
(162620031) LAV DOOR CATCHES AGAINST BOTTOM DOOR TRACK
(163120069) AFT LAV LOCK HANDLE BROKEN AND REMOVED
(162030209) LIGHT ABOVE FORWARD URINAL IS INOP. MOST LIKELY NEEDS A BULB CHANGE
(162650128) FORWARD URINAL DRAINS TO SLOWLY TO UTILIXE
(163060122) PANEL ABOVE FORWARD URINAL REQUIRES NEW VELCRO
(163420044) FWD URINAL IS INOP; WILL NOT DRAIN TO EITHER JUG
(170240090) URINAL WILL NOT DRAIN.
(170260117) FORWARD URINAL WILL NOT DRAIN
(170800188) LAV DOOR HANDLE BROKEN OFF (FROM INSIDE)
(170850029) FRONT URINAL W/N DRAIN
(171290073) FRONT URINAL WILL NOT DRAIN
(171520047) FORWARD URINAL CLOGGED WILL NOT DRAIN
(171530105) FORWARD URINAL CLOGGED AND NOT DRAINING. PLEASE UNCLOG AND CLEAN OUT DEBRIS.
(172360140) URINAL DOES NOT DRAIN

Aircraft 4842

(150430142) LEFT SIDE URINAL LINE DOES NOT DRAIN. NEED CHECK VALVE FLANGE INSTALLED WHERE DRAIN TUBE CONNECTS TO CONTAINER
(150920173) FORWARD URINAL LIGHT WILL NOT TURN ON
(152010045) TOILET DOOR UPPER RAIL BROKE (DOOR CLOSES AS ADVERTISED)
(152010051) DRAWER IN TOILET WILL NOT SECURE CLOSED
(152150028) FORWARD URINAL WILL NOT DRAIN TO EITHER SIDE
(152820027) FORWARD URINAL CLOGGED
(152890055) AFT LAV DOOR LOCKING MECHANISM BROKEN
(152890056) AFT LAV TOILET SEAT HINGE BROKEN
(153010340) FRONT URINAL DOES NOT DRAIN
(153110054) FORWARD URINAL DOES NOT DRAIN
(153550062) FWD URINAL HAS LITTLE TO NO DRAINAGE
(153570081) URINAL WOULD NOT DRAIN

(161050158) AFT TOILET SEAT REQUIRES REPAIR AS IT IS HELD IN BY RED DUCT TAPE
(161050159) FORWARD URINAL BY FLIGHT DECK DOES NOT DRAIN
(163220200) AFT LAV LOCKING MECHANISAM IS BROCKEN
(170760059) FORWARD URINAL LIGHT INOP.
(171590169) FWD URINAL HAS LOW DRAIN RATE
(171590170) FWD URINAL REQUIRES CLEANING DUE TO SMELL. EFFECTING CREW HEALTH
(172570149) URINAL SMELLS MORE THAN USUAL.
(172750159) RIGHT VALVE OF URINAL NOT DRAINING IN FLIGHT
(172840246) FOWARD URINAL WILL NOT DRAIN EITHER SIDE

Aircraft 4843
(160210117) URINAL FLAP DISCONNECTED
(160580012) FWD URINAL WILL NOT DRAIN ON RIGHT SIDE. LEFT SIDE VERY SLOW DRAIN
(161940162) FRONT URINAL DOES NOT DRAIN
(162640077) **REDBALL** LAV EMPTY, DID NOT FILL. SPILLED OUT OF DRAIN HOLES. LAV UNUSABLE. SEE JCN 162630061 WCE 007
(170820172) AFT LAV DOOR NEEDS TO BE ADJUSTED
(170940122) FORWARD URINAL DRAINS SLOWLY
(170950279) FORWARD URINAL LIGHT INOP.
(172000100) FORWARD URINAL RIGHT SIDE WILL NOT DRAIN

Aircraft 4844
(153070117) URINAL REQUIRES SERVICING
(153270053) LATRINE DOOR HANDLE BROKEN/REMOVED (NO FOD NOTED)
(153590040) AFT LAV. TOILET SEAT BROKEN/INOP
(162060028) TOILET SEAT HINGE BROKE
(161260145) URINAL LID BROKEN OFF
(162420110) FORWARD URINAL WILL NOT DRAIN
(162480062) URINAL SLOW TO DRAIN
(162650094) FWD URINAL VERY SLOW TO DRAIN
(162850169) FWD URINAL DRAINS IMMENSELY SLOW
(162930126) FRONT URINAL LIGHT OUT
(163050129) FRONT URINAL LEAKING FROM BOW
(163550148) AFT LAV MOTOR INOP
(171670056) LAV TOILET SEAT BROKEN

Aircraft 4845

(140380119) AFT LAV HAS A LEAK ONTO THE FLOOR
(141200020) FORWARD LAVATORY LIGHT INOP
(172260091) URINAL RIGHT HOSE WILL NOT DRAIN
(172500037) LAV TOILET SEAT BROKEN

Aircraft 4846

(141750119) LAVATORY FULL AND NEEDS SERVICING
(161880041) AFT LAV LEAKS INTO CARPET
(162990090) LAV DOOR INNER HANDEL IS BROKEN
(162420193) FWD URINAL DOES NOT DRAIN, IS BACKED UP, PRESENTS HEALTH HAZ ARD.
(162700107) URINAL WAS NOT DRAINING EITHER SIDE
(162900033) FORWARD URINAL WILL NOT DRAIN
(162950076) FORWARD URINAL OVERHEAD LIGHT INOP
(163420068) URINAL LEAKED ALL OVER AND ON CARPET
(170860027) FRONT URINAL LOOSE D RING WHERE HOSE MEETS TANK
(170900073) FRONT URINAL LEAKS CONSISTENTLY
(171190067) FORWARD URINAL WILL NOT DRAIN.

Aircraft 4847

(170310209) FRONT URINAL LIGHT INOP
(170430100) FRONT URINAL DOES NOT DRAIN

Aircraft 4848

(150920098) FRONT URINAL IS DRAINING A LOT SLOWER THAN NORMAL. TOOK 15 – 20 MIN TO DRAIN PER USE.
(151190101) FWD URINAL INOP
(172960089) AFT LAV LEAKS INTO CREW COMPARTMENT

Aircraft 4849

(140370071) LAV NEEDS SERVICING
(143510169) TOILET TANK LEAKING BLUE WATER ON FLOOR
(150340196) FWD URINAL IS SLOW TO DRAIN.
(150350160) FWD URINAL SLOW TO DRAIN
(160820093) URINAL DRAINS INSUFFICIENTLY SLOW
(161590253) FRONT LAV IS CLOGGED, WON'T DRAIN
(162300032) FRONT URINAL DOES NOT DRAIN
(162590049) FORWARD URINAL WILL NOT DRAIN

Aircraft 2662

(141220175) LAV LOCK AND HANDLE INOP
(161020182) LAV DOES NOT FLUSH
(161930117) URINAL LID BROKEN AND REMOVED NO FOD
(162070234) TOILET FLUSH INOP.
(162090209) LAV WILL NOT FLUSH
(163580126) URINAL VALVE INOP FOR FLOW TO LEFT TANK
(163640151) TOILET CONTINUALLY FLUSHES. BREAKER PULLED

Aircraft 2663

(152260078) TOILET FLUSH BUTTON CAUSES TOILET TO RUN CONTINUOUSLY
(152920186) TOILET WON'T STOP RUNNING
(161110196) I ELIMINATED SOLID WASTE IN THE LAV. WRITTEN UP PER T.O.
(162220238) TOILET WOULD NOT STOP FLUSHING. PULLED CIRCUIT BREAKER

Aircraft 2667

(150150074) FWD LATRINE LOCK INOP
(150480178) FORWARD LAV LATCH HANDLE BROKEN OFF. LOCATED IN NAV DRAWER (P/N SAM-10R)
(152650189) URINAL TUBES LEAK COPIOUSLY
(171290214) CARPET FELL OFF WALL ON AFT LAV WALL
(172720183) TOILET LAV WATER FILLING UP THE PAN ON THE FLOOR

Aircraft 2670

(143280193) BLUE WATER ON FWD LATRINE FLOOR
(152880097) FORWARD LAV TOILET DRAINING/LEAKING ONTO FLOOR
(152360102) PEE TUBE LEAKING
(161230080) FRONT LAV DOOR OUT OF ALIGNMENT. VERY DIFFICULT TO OPEN/CLOSE
(161230088) HONEYPOT HAS EXCESSIVE LEAKING. NOT ACCEPTABLE FOR MISSION

Aircraft 2672

(141740058) LAVATORY LIGHT INOP
(170390219) FRONT LAV NEEDS CLEANING. SMELLED STRONGLY LIKE URINE WHEN CREW ARRIVED AT AIRCRAFT

Aircraft 3582

(172410194) NO FORWARD TOILET INSTALLED. AFT TOILET DOES NOT FLUSH
(172470036) FWD LAV NEEDS SERVICING
(172470037) FWD URINALS LEAK, NEED REPLACEMENT
(172480158) AFT LAV LIGHT INOP

Aircraft 9792

(140940151) FWD URINAL WILL NOT DRAIN
(141480274) FORWARD URINAL DRAIN RATE INSUFFICIENT FOR PRACTICAL USE.
(141530082) FORWARD URINAL DOESN'T DRAIN.
(141730051) FWD URINAL WILL NOT DRAIN, BOTH VALVES OPEN, TOOK 45 MINS TO EMPTY
(141840129) AFT LAV REQ SERVICING/FIXING
(143130015) AFT LATRINE WILL NOT FLUSH
(152530174) LAVATORY LEAKING TOILET WATER ON FLOOR OF LAV AND JET
(161630034) LAV DOOR WILL NOT CLOSE FULLY. CATCHES ON FLOOR PLATE AND WI LL NOT LOCK.
(161660080) LAV HAS LEAK COMING FROM HOLDING TANK TO FLOORING.
(161800185) LAV LEAKING ON FLOOR
(162410189) AFT LAV LEAKING BLUE WATER INTO GALLEY AND INTO HELL HOLE
(162760013) AFT LAV COMPLETELY FULL
(162760014) 1 FWD URINAL NEEDS SERVICE LEAKED ON FLOOR
(170200108) AFT LAV LEAKS INTO CABIN
(170230196) AFT LAV IS LEAKING
(170430095) ACFT LAV DOOR DISCONNECTS FROM TRACK DURING FLT
(170570018) **REDBALL** LAV DUMP TUBE LEAKING

The unsanitary conditions onboard the 55th Wing's aircraft clearly demonstrate a dereliction of duty by the aircraft mechanics as well as the Flight Surgeon. If the aircraft mechanics perform so poorly on simple lavatory maintenance, how do they fare on more complex aircraft systems? Well, let's take a look.

Equipment Cooling

Constant upgrades to the RC-135s electronic equipment exceeded the cooling capability of the aircraft's air conditioning system. In 2007, L-3Commmunication designed and fielded a new

liquid cooling system (LCS) that circulates a super-cooled oil called PAO to the mission equipment from a centrally located chiller. The first time this new system appeared in the ISO Dock, no one could work on it because L-3Communications failed to provide training or technical data for the new system. A fuel cell in the forward body tank was removed to accommodate the new equipment.

The LCS pluming is buried throughout the aircraft and is extremely difficult to access. Leaks are frequent. If the equipment can't be cooled, then the aircraft can't perform its mission. The following is a partial list of cooling system failures that have resulted in either an air abort or a ground abort. This is not an all-inclusive list:

RC-135W 62-4135

- 3 March 2014 – Crew discovered coolant leaking from liquid cooling system during preflight. Moved to spare jet 4139, and it was also leaking coolant. Mission cancelled.
- 27 May 2014 – LCS pressure initially read 45psi Approx 1645z, pressure dropped to 14 psi. By 1800z, pressure had dropped to 0. Air bubbles appeared in line sight window above CD rack and fluid appeared to be flowing in wrong direction. No leaks found in cabin. Equipment turned off when temp reached 62°F. Crew cancelled planned transition, to full stop. Post flight, PAO covered belly of aircraft from fuel cell to tail.

RC-135W 62-4139

- 12 February 2014 – During orbit at Melrose, ASEs detected leaking PAO fluid from LCS near AMS station. During detection, diagnosis, and stop of leak, seven crewmembers touched PAO fluid with hands. Commander ordered termination, fuel dump, RTB. Declared emergency, landed ILS, met by emergency crew at Mike South. Exposed personnel ordered to report to flight med.
- 24 March 2014 – OPS sortie. PAO leak in route after level. LCS shutdown to prevent further leaking. Comint equipment unavail w/o LCS, leading to mission cancel. RTB

- 26 March 2014 – LCS leaking from overhead panel. Confirmed PAO fluid on his mouse pad and drops around O2 regulator and gasper. Turned off LCS after out of box.

RC-135V 62-9792

- 21 August 2013 – LCS system inop. Stepped to spare.

RC-135V 64-14843

- 8 May 2016 – Unable to operate back-end system after PAO level dropped from 42 to .9

RC-135W 62-4130

- 17 February 2015 – PAO level shows below 25%

High Accident Potential Events

The 55th Wing Aircraft Incident Worksheets utilized to compile this data (2014 thru 2017) consist of High Accident Potential Events. AFI 91-223 dated 16 May 2013, defines an "event" in the following manner:

> An event is an unplanned occurrence, or series of occurrences, that does not meet mishap reporting criteria as defined in paragraph 1.3.1. Class E events require an investigation and report (see paragraph 1.10.5.). Reference AFMAN 91-22X for specifics on events that meet reporting requirements.

Class E events are reportable to the Air Force Safety Center per. Air Force Manual 91-223, dated 16 May 2013, with emphasis placed on paragraph 1.3.2.9., which reads:

> Report any hazardous occurrence that has a high potential for becoming a mishap and is not reportable under any other category as a HAP event. This includes emergency conditions arising from aircraft operation or from the failure or malfunction of systems or components essential for safe flight.

An example of aircraft related deficiencies specifically called out in the AFI 91-223 as High Accident Potential events are:

> 1.3.2.3.2. All uncommanded inputs to the flight controls (including stability augmenter, autopilot, or trim systems) whether it resulted in a dangerous situation or not. Report autopilot faults if, in the opinion of the aircrew, the autopilot would have put the aircraft in a dangerous situation.
> 1.3.2.5.9. All events during which a crew member executed any portion of an emergency checklist in response to toxic smoke/fumes/liquid exposure but did not experience any physiological symptoms. This includes such events in a RPA ground control station (GCS).

Nearly a thousand Aircraft Incident Worksheets were obtained by the *Omaha World-Herald*. Of these, only the Bird Strikes had been reported to the Air Force Safety Center as Class E events. (BASH[88]) With few exceptions, the remaining HAP events remained in-house at Offutt AFB.

On 14 September 2018, the Air Force Chief of Safety, Major General John T. Rauch, reissued AFM 91-223. General Rauch, having direct knowledge of trend analysis and its importance to aviation safety, continued to permit the 55th Wing to filter out the bad information by not ensuring that the required data is entered into the Air Force Safety Automated System[89]. Notably, General Rauch was the 55th Wing Vice Commander from June 2009 – July 2010. He also served as the 55th Wing Commander from June 2012 – June 2013.

The Rudder

The 55th Wing experiences a rather high number of uncommanded rudder inputs, often described by the pilots as rudder hunting or rudder oscillations. Any uncommanded rudder input is reportable as a High Accident Potential Event. The 55th Wing usually disregards this requirement.

There are two unusual and unrecognized conditions that may lead to rudder hunting or rudder oscillations — neither of which are mentioned in the aircraft maintenance manual.

One possible cause is described in a Boeing Engineering Assignment dated 1995 which was attached to a 2013 e-mail from the 190th ARW, Kansas Air National Guard. The second condition was discovered when a young military mechanic assigned to the 55th Wing accidently

[88] BASH: Bird/Wildlife Aircraft Strike Hazard

[89] AFSAS: A web-enabled mishap reporting and analysis system that can be accessed worldwide with a Common Access Card. The system is compliant with Defense Department and Air Force safety business rules with continuously-expanding capabilities, from automating the dispatch of mishap messages to tracking mishap prevention recommendations.

leaned on the rudder while hydraulic pressure was applied. I was there and witnessed the episode with my own eyes.

A third and highly probable cause has been ignored for years. I have personally experienced the "Ratcheting, Chatter, Binding, Grinding, Increased Resistance, and Skipping" phenomena described in the Pilot Reported Discrepancies. I know what causes it, I know how to fix it, and I know how to prevent it. More importantly, I understand how it may be a precursor to rudder oscillations, rudder hunting, and ultimately, the dreaded Dutch roll.

The following is a partial list of pilot reported discrepancies involving the rudder from 2014 thru 2017. The numbers in parentheses represent the Job Control Number.

Pilot Reported Discrepancies (2014 thru 2017)
Rudder

Aircraft 2662
(140089616) **REDBALL** POWER RUDDER CATCHIN
(140720153) RUDDER POWER CUT-OFF SWITCH STICKY
(162880095) AFTER INITIAL TAKEOFF AND FLAP RETRACTED TO 0º RUDDER PWR STAYED IN HIGH RANGE. FIXED AFTER TURNING RUDDER PWR OFF THEN ON.

Aircraft 4128
(141865659) RUDDER POWER SWITCH DID NOT DISENGAGE SYD OR AUTOPILOT WHEN TURNED TO OFF IN FLIGHT.
RUDDER PRESSURE GAGE READ 0
(141865660) RUDDER WAS CAUSING MINOR OSCILLATIONS IN FLIGHT. ISSUE SEEMED TO ARRISE FROM SYD OR AUTOPILOT. STOPPED WHEN OFF, RECURRED WHEN ON
(141980139) YAW DAMPER OSCILATIONS NOTED AT 31,500 FT, 293 KIAS, .80 MACH.
(142070058) DURING STEP 18 OF THE STARTING ENGINES BEFORE TAXI CHECKLIST THE EFAS WAS CHECKED WITHOUT THE EFAS SYS ENGAGED HOWEVER WHEN THE #1 ENG WAS PUSHED UP THE RUDDER IND. DEFLECTED LEFT.
(153580009) RUDDER TRIM BINDING WHEN MOVED FROM RIGHT RUDDER TRIM TO NEUTRAL TRIM. BINDING AND RATCHETING MORE SEVERE WITH MORE UNITS OF RIGHT TRIM.

Aircraft 4127
(141779615) **REDBALL** RUDDER TRIM SLIPPING.
(143430210) RUDDER PRESSURE OUT OF LIMITS. HELD 2450-2500 INSTEAD OF 2100-2400 IN LOW RANGE.
(143460025) RUDDER PEDAL NW STEERING INOP AFTER LANDING.

(162019616) **REDBALL** PWR RUDDER C/B KEEPS POPPING.
(170139615) **REDBALL** RUDDER TRIM BINDING.
(170179615) **REDBALL** RUDDER TRIM BINDING.
(170170150) RUDDER PEDALS NOT MOVING W/ RUDDER TRIM INPUT, RUDDER PWR ON
(170170151) RUDDER TRIM BINDING WHEN REVERSING DIRECTION FROM LEFT TO RIGHT AT UNITS GREATER THAN 3. RUDDER POWER ON.

Aircraft 4849

(170170151) RUDDER TRIM BINDING WHEN REVERSING DIRECTION FROM LEFT TO RIGHT AT UNITS GREATER THAN 3. RUDDER POWER ON.
(160380077) RUDDER PWR SWITCH HAD TO BE ACTUATED SEVERAL TIME BETWEEN ON AND OFF BEFORE SYS WOULD DP. PILOT NEEDED TO FORCE THE SWIT.
(160980213) RUDDER TRIM CHATTER WHEN MOVING FROM 5 UNITS RIGHT TO NEUTRAL.
(162210046) DURING TAXI AIRPLANE CONSTANTLY PULLED TO THE RIGHT AT TAXI SPEEDS (0-25 KTS) APPROX. 1-2 INCHES LEFT RUDDER REQUIRED TO MAINTAIN STRAIGHT TRACK. DID NOT NOTICE ANY PULLING DURING...

Aircraft 4846

(142240013) **REDBALL** RUDDER TRIM GRINDS WHEN OPERATED BETWEEN 0-9 LEFT.
(161300151) RUDDER PEDAL NOSEWHEEL STEERING BECAME INOP AFTER LANDING. NOSEWHEEL TILLER STILL WORKED.
(161670250) RUDDER PRESSURE GUAGE STUCK AFTER SHUTDOWN IN HIGH RANGE. TAPPED 5-6 TIMES TO GET NORMALIZED.
(162920105) RUDDER PEDAL NOSE WHEEL STEERING INOP AFTER LANDING EFAS FAIL LIGHT ILLUMINATED ON LANDING NORMAL HYD PRESSURE AND RUDDER PRESSURE INDICATIONS OBSERVED
(162990094) ERRONEOUS AIRSPEED, AIRSPEED CALL OUTS WITH FLAPS RETRACTED RUDDER PX IN LOW RANGE AND BELOW 230 KTS IAS
(170310100) RUDDER PEDAL NOSE GR STEERING MALF TAXIED OUT OF CHOCKS & COULDNT USE R.P TO TURN LEFT TILLER WHEEL FINE TAXIED OUT MORE & LEFT WORKED BUT RIGHT DIDN'T TAXIED BACK USING TILLER SEE JCN 170310143
(172490050) EFAS WOULD NOT ENGAGE W/20 DEGREE FLAPS (BELOW 200 WITH GOOD RUDDER PRESSURE). WOULD NOT ENGAGE ONCE FLAPS WERE AT 30 DEGREES.

Aircraft 9792

(140650221) RUDDER PEDAL NOSE WHEEL STEERING INOP ON LANDING.

(142970142) RUDDER PRESSURE ONLY REACHED 2600PSI WHEN FLAPS DOWN. CYLED FLAPS; THEN PSI 27000. CYCLED AGAIN; WENT TO 2900 PSI IN TOLERANCE) AND REMAINED FOR REST OF FLIGHT.

(152750087) LOUD RACHETING SOUND FROM THE NOSE GEAR WHEN TURING USING BOTH THE TILLER OR RUDDER PEDALS

(153350148) RUDDER PRESSURE INDICATED 2500 PSI WITH FLAPS @ 20. INDICATED PROPERLY LAST 20 MIN.

(161960090) AIRCRAFT WOULD OCCASIONALLY MOVE TO AN OUT OF TRIM RUDDER STATE (LEFT YOKE INPUT). ROLL AXIS WAS DISENGAGED WITH YAW DAMPER ON AND ISSUE WAS NOTICED WHILE HAND FLYING

Aircraft 4126

(140620103) RUDDER PRESSURE LIGHT BURNED OUT

(141720015) RUDDER TRIM WHEEL FEELS LIKE GEARS ARE SLIPPING

Aircraft 4131

(143080169) RUDDER PX INDICATES 2500 PSI WHEN FLAPS ARE RETRACTED TO 0º

(160730021) A/C REQ 45 OF RGHT YOKE W/ FLAPS UP AND ENG AND FUEL BALANCED. UNCMND RUDDER, YAW, ROLL CHKLIST PERFORMED W/NO CHNGE. CONTROLLABILITY CHK COMPLETED @ 220K GW BETWEEN 11K-13K FT WITH…

(160890096) DURING CRUISE W/ FLAPS RETRACTED, AIRCRAFT REQUIRES 1 UNIT OF RIGHT RUDDER TRIM TO CENTER THE BALL, AND FIVE TO TEN DEGREES OF RIGHT YOKE TO FLY LEVEL. WITH FLAPS EXTENDED TO 50 DURING CRUISE W/ FLAPS RETRACTED, AIRCRAFT REQUIRES 1 UNIT OF RIGHT

(170060085) RUDDER POWER SWITCH GUARD IS LOOSE.

(171390067) **REDBALL** RUDDER SHUT OFF VALVE PIN BROKEN REMOVED

Aircraft 4135

(141129615) **REDBALL** RUDDER PWR W/N DISENGAGE

(142130021) YAW DAMPER/SYD SWITCHED OFF 4 TIMES DURING FLIGHT. RUDDER PRESSURE WAS IN NORMAL RANGE

(150180038) RT INBOARD SPOILER AT 5 WITH SPEED BREAKS DOWN. UP 1 IN LEFT TURN. CAUSES UNEVEN FUEL BURN IN 3 AND 4 MAIN TANKS, YOKE 20 DISPLACED RIGHT, 2 UNITS RT RUDDER TRIM TO CENTER YOKE.

(150859615) **REDBALL** POWER RUDDER WILL NOT DISCONNECT

(153350132) RUDDER PEDAL NOSEWHEEL STEERING NOT FUNCTIONAL ON FULL STOP TAXI BACK.

(161900102) RUDDER PEDAL NOSE WHEEL STEERING INOP

Aircraft 4138

(140940066) RUDDER PEDAL NOSEWHEEL STEERING INOP AFTER LANDING TILLER STEERING WORKED NORMALY.

(152189616) **REDBALL** RUDDER TRIM HANDLE BINDS AT 5 UNITS

(152939615) **REDBALL* RUDDER TRIM BINDING

(161640007) LIGHT FOR RUDDER PX HIGH/LOW GAUGE IS VERY LOOSE/FALLING OUT ONLY WORKS IF ADJUSTED BY HAND.

(162890057) RT HYD SYS. PX GAUGE FELL DOWN TO 2200PSI. WHEN FLAPS EXTENDED, PRESSURE ON RUDDER PX GAUGE INDICATED 3000PSI (NORMAL)

(163370173) RUDDER PEDALS RUB ON HOUSING, MAKING A GRINDING NOISE AND REQUIRES A BIT MORE FORCE TO PUSH FULL TRAVEL

(163480135) RUDDER PEDAL NOSE WHEEL STEERING INOPERATIVE DURING TAXI/TAK EOFF AND UPON LANDING THROUGH TAXI TO PARKING

(163640084) UNSCHEDULED RUDDER DISPLACEMENT FOLLOWED BY RUDDER HUNTING.

(163640086) SYD DID NOT DISENGAGE WHEN THE RUDDER POWER WAS OFF. (AUTOPILOT DID DISENGAQE AS WELL) DISENGAGE LIGHTS STAYED OFF.

(163640088) ACFT IMPOUNDED FOR UNSCHEDULED RUDDER DISPLACEMENT SEE JCN 1 63640084.

Aircraft 4129

(140840203) PILOT'S RUDDER PEDAL HOUSING IS RUBBING PEDALS AND MAKING KNOCKING NOISE WHEN DEFLECTING PEDALS.

(141010123) RUDDER PEDAL NOSE WHEEL STEERING INOP ON TAXI-IN.

(141110185) SIGNIFICANT RUDDER PEDAL DEFLECTION REQ DURING TAKEOFF ROLL (APROX 3-4 INCHES IN EITHER DIRECTION). INCREASED IN INTENSITY AS PLANE ACCELERATED.

(141810293) RUDDER HUNTING WITH STRONG OSCILATIONS. OCCURED IN CLIMB, STOPPED AT INITIAL CRUISE AND THEN RESUMED LATER IN FLIGHT. INTENSITY INCREASED. FL260 250KNTS

(142050144) ON APPROACH 17000-16000 FT RUDDER HUNTING STARTED. SPEED 200 KIAS, GEAR DOWN FLAPS UP, AP OFF. RUDDER POWER OFF FIXED PROBLEM. FLEW HOS SYSTEM OFF - GOOD LANDING.

Aircraft 4133

(141690093) RUDDER WAS CATCHING WHEN MAKING RIGHT HAND TURNS. CLICKING WAS INITIATED IMMEDIATELY AFTER RUDDER APPLICATION FOLLOWED BY SMOOTH MOVEMENT FOR REMAINDER OF RUDDER INPUT.

(142750156) RUDDER PEDAL NOSEWHEEL STEERING DID NOT WORK AFTER LANDING.

(143170200) RUDDER PEDAL NOSE WHEEL STEERING INOP.
(150579616) **REDBALL** MANUAL RUDDER DOES NOT DEFLECT RIGHT
(151490051) 2.5 UNITS OF LEFT RUDDER TRIM REQUIRED FOR CORDINATED FLIGHT. ENGINES WERE NEARLY THE SAME N1.
(152170139) RUDDER REQUIRED 2 UNITS OF TRIM IN FLIGHT @ 210KTS, FL320 AND 1.5 UNITS OF TRIM @ 280KTS AT FL320.
(152249618) **REDBALL** RUDDER TRIM BINDING PAST 2 UNITS.
(170090173) RUDDER PEDAL STEERING NEEDS TO BE RESET.
(170530157) RUDDER PEDAL NOSE WHEEL STEERING LAGGED & VERY SLUGGISH WHEN APPLYING RT RUDDER PEDAL. HAD TO USE TILLER TO MAKE SMALL CORRECTIONS OF RT RUDDER. LT PEDAL NOSE WHEEL STEERING WORKS.
(171869615) RUDDER TRIM BINDING.
(172279615) **REDBALL**RUDDER TRIM BINDING.

Aircraft 3582

(142190038) 255KNTS RUDDER PRESS BEGAN RAPIDLY OSCILLATING BETWEEN 2100-2400 PSI. 2MIN LATER CREW EXPERIENCED VIOLENT LEFT AND RIGHT YAW. CREW IMMEDIATELY WENT RPO AND YAW STOPPED.
(142290027) UNCOMMANDED RUDDER DEFLECTION FL 365, 255 KIAS. AP ENGAGED (PITCH, ROLL, ALT, NAV/LOC) RUDDER PX FLUCTUATING BETWEEN 2100 -2400 PSI FOR 20 SEC THEN HARDOVER RUDDER. RUDDER POWER SWI…
(153270102) AT APPROX. 275 KIAS/AND FL230/LEVEL FLIGHT, THE RUDDER PRESSURE BEGAN TO FLUX A COUPLE HUNDRED LBS PSI AND EVENTUALLY TOPPED OUT AT 2500 PSI. THIS OCCURRED TWICE
(160770174) RUDDER PRESS. OUTSIDE LIMITS FOR LOW RANGE, INDICATES 2500 PSI.
(161970043) RUDDER PRESSURE OUT OF LIMITS IN LOW RANGE. PRESSURE READING 2550 PSI AT 24000', 300 KIAS, GEAR UP, FLAPS UP, SPEED BRAKES 0 DEGREES, USING FWD BODY AFT PUMP.
(162010060) RUDDER HYDRAULIC PRESSURE FLUCTUATES OUTSIDE OF LOW RANGE LIMITATIONS UP TO 2550.
(162310143) RUDDER HYD PRESSURE 2600 PSI AND CLIMBING WITH FLAPS UP AND AIRSPEED 280 KIAS. DID NOT MAINTAIN IN LOW RANGE
(172860116) RUDDER POWER OUT OF LIMITS. 2475 ABOVE 250 KTS.

Aircraft 2667

(141330188) RUDDER PRESSURE INDICATOR BACKLIGHT INOP.
(153090083) FLEW AIRCRAFT AT 272 KIAS W/ RUDDER PRESSURE IN HIGH RANGE IN STRAIGHT FLIGHT FOR LESS THAN 30 SECONDS. THE CREW DID NOT MAKE ANY RUDDER INPUTS ABOVE 260.

Aircraft 4844

(152820063) **REDBALL** RUDDER TRIM RATCHETS/BINDING GOING FROM FULL LEFT TO CENTER.

(152890188) RUDDER TRIM "RATCHETS" FROM 5 UNITS TO APP. 1.5 UNITS LEFT.

(153000178) RUDDER TRIM RATCHETS FROM APP. 5 L UNITS TO 2 LEFT UNITS.

(162859616) **REDBALL** RUDDER PEDALS BINDING.

(163480176) PILOT SIDE RUDDER PEDAL CTCHES ON COVER WHEN MOVING FROM FULL RIGHT RUDDER.

Aircraft 4130

(150420139) RUDDER PX GAUGE DOES NOT ILLUMINATE AT NIGHT

(150610085) CREW REPORTED VIBRATION DURING RUDDER CYCLING AS HYDRO WARMUP & RUDDER CHECK ACCOMPLISHED. VIBRATIONS FELT BOTH AT AFT END JET AND IN COCKPIT. NOT IN RUDDER PEDALS.

(150619615) **REDBALL** RUDDER PEDDLE VIBRATION FELT WITH FULL TRAVEL OF RUDDER

(160270170) UNSCHEDULED RUDDER MOVEMENT (SNAKING) – INCREASED IN OSCILL ATION - RUDDER POWER OFF NO OSCILLATION RUDDER POWER TURNED ON - NO MOVEMENT- SYD TURNED ON – MAJOR LURCH FELT RUDDER POWER TURNED OFF. RUDDER POWER TURNED ON, FELT ANOTHER LURCH.

Aircraft 4139

(140790277) LINEAR ACTUATOR DID NOT RESET AND RUDDER PEDDLE NOSE-WHEEL STEERING INOP.

(140920236) ON ARRIVAL WHEN MOVING FLAPS TO 20/30 +50 RUDDER POWER WAS IN BETWEEN LOW AND HIGHRANGE APPROX 2550 AT FIRST AND THEN ABOUT 2750 BY ENG SHUT-DOWN.

(140990179) RUDDER PRESSURE READING STUCK AT APPROXIMATELY 2550 PSI. HAPPENED WHEN RETRACTING FLAPS ON INITIAL TAKEOFF. CORRECTED IT SELF AFTER 2 MINUTES.

(140999616) **REDBALL** RUDDER PWR PRESS IND 2600 WITH FLAPS DOWN.

(141480263) HYDRAULIC PRESSURE FOR POWERED RUDDER DIPPED TO 2600 PSI WITH FLAPS EXTENDED (BETWEEN LOW AND HIGH RANGE) THREE MINUTES LATER POPPED BACK INTO HIGH RANGE THROUGH LANDING.

(152780152) UNCOMMANDED RUDDER INPUTS @ 34,000FT 285KTS 3-4 LEFT-RIGHT OSCILLATIONS BEFORE RUDDER POWER TURNED OFF. NO ASSOCIATED PEDAL MOVEMENT.

(160310064) RUDDER PX INITIALLY DROPPED INTO LOW POWER RANGE ON FLAP RET RACTION. (2200 PSI) ON LEVEL OFF NOTED PX E 2550. RUDDER POWER OFF REST OF FLIGHT TILL FLAPS 20 BELOW 220 KNOTS.

(160560162) RUDDER HUNTING - STEADY OSCILLATIONS AT FL300. HUNTING CONT W / AUTOPILOT DISENGAGED. HUNTING STOPPED W/ YAW DAMPER AND RUDDER PWR OFF.
(163440050) RUDDER TRIM MARKINGS WORN/ INDECIPHERABLE.
(170520157) RUDDER TRIM PLACARD UNSTUCK FROM CONSOLE.
(170650209) RUDDER TRIM RATCHETS WHILE MOVING THE RUDDER TRIM

Aircraft 4843

(171310157) POSBL UNCMNDED RUDDER DEFLECTIONS. NAV DISPLAY/SYS'S/HF XP 'D XTREME ELEC FLUX. NO ACTUATIONS OBSERVED. RUDDER DEFLECTION GAGE MOVED, RUDDER PEDALS DIDN'T.

Aircraft 4129

(140290216) RUDD HUNTING ON CLIMBOUT 10K FT, 250KTS, ENG ALIGNED, FUEL BA L. SYD ON AUTOPLT ENGD. TURNED RUDD PWR OFF, LRG RUDD DEFLEC. TURNED RUDD PWR BACK ON LRG RUDD DEFLEC AGAIN.
(141750139) UNCOMMANDED YAW FL310, RP ON, SYD ON, A/P ON. CUT RP OFF, RE ENGAGED. UNCOMMANDED YAW DID NOT CONTINUE.
(141810293) RUDDER HUNTING WITH STRONG OSCILATIONS. OCCURED IN CLIMB, ST OPPED AT INITIAL CRUISE AND THEN RESUMED LATER IN FLIGHT. INTENSITY INCREASED. FL260 250KNTS
(142050144) ON APPROACH 17000-16000 FT RUDDER HUNTING STARTED. SPEED 200 KIAS, GEAR DOWN FLAPS UP, AP OFF. RUDDER POWER OFF FIXED PRO BLEM. FLEW HOS SYSTEM OFF - GOOD LANDING.
(162100328) RUDDER PEDAL NOSEWHEEL STEERING INOP AFTER FULL STOP LANDING.
(162780128) RUDDER PEDAL NOSE WHEEL STEERING SLOW TO RESPOND WHEN THE RI GHT PEDAL WAS PUSHED. PLANE RESPONDED AFTER 2 SECONDS.
(163400156) RIGHT AUX HYD PUMP STOPPED WORKING DURING RUDDER CONTROL CHE CK DURING PREFLIGHT. RUDDER PRESSURE INDICATOR SHOWED 0 PSI. RUDDER PRESSRIZED NORMALLY USING ENGINE HYD PUMPS AFTER ENGINE START W/RT AUX HYD PUMP SWITCH OFF.
(172009616) **REDBALL** RUDDER TRIM SKIPPING.

Aircraft 2663

(161020194) ON FULL STOP, AC APPLIED BRAKES AT 120KTS. EXCESSIVE CHATTER FELT THROUGH RIGHT RUDDER PEDAL,
ALSO FELT AT NAV STATION AND ALL OF BACK END CREW.
BRAKE CHATTER EXPERIENCED ALL THE L…
(170910068) RUDDER TRIM CHATTER + INCREASED RESISTANCE 2-5 RIGHT CHATTER 2L-3R CHATTER 3-5 LEFT INCREASED CHATTER.

(170925102) RUDDER PEDAL NOSEWHEEL STEERING INOP WHILE TAXING AFTER LANDING.
(171180273) RUDDER HUNTING @ FL330 247 IAS, HAPPENED 2X, TURNED RUDDER POWER OFF.
(172400321) 2 UNITS LEFT RUDDER TRIM REQUIRED DURING FLIGHT. TEMP -41C, N1 88.2 ON ALL ENGINES, FUEL TANKS BALANCED. 12 HRS AT CRZ HAD ROUGHNESS WHEN TRIMMING RUDR TO THE RIGHT ON GROUND. X2FLIGHTS

Aircraft 4842
(163220201) DURING PREFLIGHT POWERED RUDDER CHECK W/ ENGINES OFF RESULTED IN GRINDING SOUND + VIBRATION ONCE ENGINES STARTED POWERED RUDDER CHECKED GOOD.
(170040248) **REDBALL** RUDDER CONTINUES TO BUILD PRESSURE WITH RUDDER POWER SWITCH OFF.
(170829615) **REDBALL** TRIM RUDDER PEDAL SHROUD REQ SHEET METAL REPAIR.
(170860050) **REDBALL** RUDDER TRIM ACTUATOR BAD REQUIRES REPLACEMENT.
(172540157) RUDDER POWER INDICATOR/GAGE BACKLIGHT INOP.

Aircraft 4845
(170910026) AIRCRAFT PULLS TO RIGHT WHILE TAXING. DURING TAKEOFF ROLL FULL LEFT RUDDER NEEDED TO MAINTAIN CENTERLINE CONTROL.
(172660019) EFAS FAILED TEST BEFORE ENGINE START. WOULD ONLY TEST GOOD WITH ENGINES RUNNING AFTER CYCLING RUDDER LEFT AND RIGHT.

Electrical System Emergencies

Another deficiency afflicting the 55th Wing's C-135 fleet is its unreliable electrical system. The RC-135 utilizes 75/90 KVA generators mounted to three of its four engines. The Aircraft Incident Worksheets covering a period of October 2011 thru July 2016, contain eighty (80) serious electrical system malfunction warranting a ground abort, inflight abort, or an inflight emergency. The following is only a sample:

RC-135V 64-4844

- 4 October 2013 – On heading 145 at FL300 at 0854Z, GEN. 1, 2, 4, were lost. Autopilot turned off as a result and the A/C took command of aircraft flying pitch and power on the STBY EFIS. Co-pilot initiated Loss of All Generators Checklist. Nav monitored location

due to critical area and backed pilots up on altitudes and communications. After checklist complete all three generators were functioning properly in isolation. Did not try to Sync generators or bring Recon area power back up. Power was restored to front end and navigation system. Declared an IFE with AEU Center and requested direct to GOMPI at FL 220. Was told to proceed and squawk 7700. Switched to DOHA Approach for a direct AUAB and then Vectors for ILS. Given Lost Comm procedures of Direct MENTA and HOLD descend in holding for ILS. Landing was uneventful fire crew checked aircraft and cleared the jet for taxi back to parking.

RC-135S 61-2663

- 11 April 2016 – Upon level off at cruise altitude, navigator noticed burning smell near circuit breaker panels. Electrical burning smell was coming from GCU #1 and #2. Both GCUs were also hot to the touch. GCBs #1 and #2 were tripped, GCUs started to cool down and fumes dissipated. Dumped 46.5k of fuel. (JCN 161010029 & 161010031

RC-135W 62-4131

- 18 October 2015 – While in orbit, electrical power cycled off and on about 3.5 hrs. into flight. #1 GCB and #2 Bus tie breakers popped. At the same time, ASE #1 reported that power had cycled in the back. Navigator went to the auxiliary seat and noticed lights on generator panel had come on and that GCU #1 was starting to smoke. I told ASE#1 that we had smoke up front and also called the co-pilot back up who had taken a moment to put her lunch in the microwave. Crew went on O2. ASE#1 removed GCU#1 in container used to hold maintenance equipment and gear-down locks. It continued to smoke for about 10 mins. Dumped 23K lbs. fuel.

OC-135B 61-2672

- 9 March 2016 – 2 hrs inflight #2 GEN Breaker Light Illuminated. We checked CB's (they were in) and we elected one reset using the Gen Breaker switch. Light came back on 2 mins later and the Gen Drive oil light was illuminating intermittently until the Gen control switch was tripped. Level flight, light turbulence, FL240, 278 indicated. No engine thrust change, no electrical demand change. #1 & #3 gen indicated that they were carrying #2's load.

- 12 June 2016 – #1 Gen breaker lights followed by #1 Gen control light illuminated. CB's CK good. GCB reset and #1 Bus Tie breaker tripping #1 BUS offline. See page 4 blk 3 for more info.(JCN 16164832)

RC-135V 64-14846

- 14 March 2017 – During air refueling, switch DC Bus failed with light illuminated. Backed away from tanker after taking 10,000 lbs. Immediately went to battery power switch. Emergency light stayed on. All transformer rectifiers and electrics checked normal. Lost all communications, powered rudder, autopilot, N1, N2, EGT gauge, pilots primary plight [sic] display, multi-function display, aircraft performance computer, fuel valve controls, fire controls, etc. –all systems assoc. w/SDCB. Followed tanker for approx. 10 mins. while trouble shooting. Found and reset open DC power distribution circuit breaker. Light went out, moved battery power switch back to "normal." All systems worked normally for approx. 5 mins, established pre-contact position to continue refueling. When closing from pre-contact to contact, SDBC failed again w/same indications. Went to battery power and reset CB. System came back up, electrical indications normal. SDBC failed 3rd time. Decided to RTB w/tanker after approx. 5 mins on station. Crew stayed in formation and followed tanker back to OTBH. Crew began system shutdown to decrease electrical load. Began using center wing fuel to conserve main wing tank fuel, but after approx 20 mins realized imbalance due to tank-to-engine manifold valve switches being stuck in position because of electrical issues. Crew reset CB again to position fuel valves for remainder of flight. SDCB and CB stayed on for remaining 2 hrs of flight. Stayed in formation w/tanker until final approach to insure continued comms in case of reoccurrence. Tanker leveled off at 1800 MSL. Landed and taxied clear of runway.

RC-135W 62-4125

- 29 October 2014 – Crew of ELITE 71 completed aerial refueling rendezvous with its tanker, ELITE 50 prior to entering its operating area during a combat sortie. As co-pilot maneuvered toward tanker, the pilot noticed #1 ENG "Compartment Hot" light illuminated. Pilot notified tanker to stand by pending emergency procedure. Stabilized at safe altitude, then pulled #1 throttle to idle. Light didn't go out, so crew proceeded to shut down engine. At that time, the

electrical system did not work as advertised, and #1 bus came offline. Immediately the mission compartment was plunged into darkness. The autopilot disconnected, and the pilots' instruments lost most of their indications. The pilot took the controls, then transferred them to the co-pilot. The crew focused on aircraft control. The co-pilot used the tanker as a primary reference, and the pilot got a quick radio call off to ELITE 50 telling them what was happening. The tanker offered to coordinate a turn back toward home and accomplished route termination procedures. The VFR procedures ingressing and egressing the combat area are very tight, and without navigational references was grateful to have the tanker assist in clearing and navigating. The navigator continued with the checklist and managed to bring the #1 bus back online. With this immediate situation resolves, the crew focused on cleaning up the checklists. Supervisor worked SATCOM links to relay intentions to CAOC while navigator calculate altitudes and landing weight for RTB. Uneventful engine-out landing. Flight duration 4.3 hrs.

Fuel Fumes in the Cabin

All Offutt Based C-135s can take on fuel while airborne from a KC-135 or a KC-10 aerial refueling tanker. Never, ever should fuel or fuel vapor penetrate the aircraft cabin. On the other hand, it occurs frequently on Offutt AFB assigned C-135s. This type of event should prompt the aircrew to declare an Inflight Emergency (IFE). Some pilots, however, accept the condition as a "new normal". I want to make this clear, so I will repeat it. Fuel and fuel vapor in the cabin should never be accepted. Nineteen incidents are listed below. Note the frequency involving tail number 4841. This is not an all-inclusive list:

4841 – 9 June 2013	4126 – 5 May 2015	4845 – 9 June 2013
4841 – 23 June 2013	4125 – 30 March 2014	4845 – 25 Feb 2014
4841 – 28 June 2013	4125 – 14 July 2015	4842 – 11 Dec 2016
4841 – August 2013	4129 – 12 Dec 2011	4131 – 6 July 2016
4841 – 4 Dec 2013	4848 – 8 July 2012	4124 – 15 August 2015
4135 – 30 July 2014	4135 – 30 August 2014	9792 – 12 August 2014
9792 – 25 July 2014		

On 19 September 2014, RC-135V 64-14841, call sign "SNOOP 52" declared an Inflight Emergency for fuel vapor in the cabin. The 55th Wing Aircraft Incident Worksheet reads:

> Fumes were detected during climbout. Thought it was fuel in the AAR manifold. Scavenged per. Section 8. Smell went away for a few minutes, then came back. Several crewmembers in the Recon Compartment smelled fumes. The crew went on Oxygen. We began a decent to 10,000 and turned back to KOFF. We ran the Smoke Fumes Elimination, Aircraft Ventilation (first 3 steps), and fuel dump checklists and referenced the AAR Manifold Leak part of Section 8. Proceeded to South fuel dump area, dumped 20K to get down to landing gross weight. Flew a coupled ILS with a right seat landing. Stab trim was cutout per the T.O. Full stopped, taxied clear, and egressed.

During the previous ISO inspection of this aircraft (tail number 4841) the ISO Dock mechanics replaced the "tulip seal" (officially known as a "dumbbell" type seal) located on the Aerial Refueling Receptacle. The procedure requires removal of a section of the fuel manifold. The mechanics failed to install a large O-ring seal in the manifold during reassembly. As is customary, the mechanics did properly annotate a "leak check" in the aircraft's 781 Forms.

Fuel manifold leak checks are performed after the aircraft are moved from the ISO Dock and into the fuel systems maintenance hangar. It is safe to assume that the leak check was not performed, as the absence of such a large O-ring would have been obvious. Furthermore, it is likely that the O-ring had been missing for quite some time, as evidenced by the previous five fuel fume discrepancies on aircraft 4841.

RC-135V 63-9792 is another interesting case. On 25 July 2014, a pilot reported discrepancy read, "Fuel manifold leak during aerial refueling". One month later, 12 August 2014, the pilots reported a "slight fuel manifold leak during aerial refueling, about 1 cup or 5 drops/minute".

Due to the frequency of fuel and fuel fumes in the cabin, and specifically considering aircraft 4841 and 9792, it is my opinion that the 55th Wing fuel system maintenance technicians do not perform aerial refueling manifold leak checks as prescribed by the maintenance manual.

The United Kingdom

When I made my disclosure to Congress in 2008, I was unaware of a proposal by the United Kingdom to purchase three retired KC-135 aerial refueling tankers from the United States. The old U.S. tankers would be converted into RC-135 Rivet Joint spy planes under contract by L-3Communications as a replacement for the UK's own faltering spy plane known as the Nimrod. Officially, the United Kingdom RC-135 is named, "Airseeker".

The non-airworthy condition of Rivet Joint 62-4127, as described in my disclosure to Congress, was strikingly similar to the non-airworthy condition that led to the deadly 2006 inflight fire on board Nimrod XV230 over Afghanistan.

Eventually, the United Kingdom became aware of my Congressional disclosure and placed a specific demand on L-3Communications to mitigate the likelihood of another fire caused by fuel lines leaking onto hot equipment. The USAF then issued a request for information titled, "KC-135 R/T Air Refueling Fuel Vapor Protection" dated 25 February 2013. The intent of the solicitation was to replace the entire fuel manifold with double-walled fuel lines. This topic was formally addressed by the British Parliament on 14 January 2014:

> **Angus Robertson:** To ask the Secretary of State for Defense whether the RC-135 Airseeker is equipped with single skin fuel lines. [182235]
>
> **Mr. Dunne:** The RC-135 does have single skin fuel lines but, in the case of the air-to-air refuelling and fuel dump systems, these have been modified by the United States Air Force (USAF) to incorporate shrouding and venting of the couplings. The modified system is being thoroughly assessed as part of the development of the aircraft safety case.

The modification never materialized.

Burning Fumes in the Cabin

Sometimes the aircrew will document a "burnt-chicken" smell in the cabin. The obvious culprit is a birdstrike — the ingestion of a bird into an engine. Some pilots treat birdstrikes as an inflight emergency, while others continue the flight and monitor the engine instruments for signs of damage.

A more serious odor, one that demands immediate attention, is the acrid smell of overheated electrical wires and equipment. Normally, circuit breakers trip "open" to protect overloaded wires and components. But sometimes not. The Following is a sample of several hundred burning smells resulting in inflight emergencies, inflight aborts, and ground aborts.

TC-135W 62-4127

- 25 January 2016 - During pre-flight before engine start, smoke & fumes appeared around switched DC bus panel. Smoke smelled acrid & filled flight deck. Crew went on O2 and evaluated after shutting off power. Smoke dissipated after a few mins.

RC-135W 62-4134

- 12 August 2016 - While on IFR traffic pattern downwind, tactical coordinator reported smoke and fumes from position 17 near LCS. Crew went on O2. ASE1 said water had dripped into electrical rack near LCS. Pilot decided on full-stop landing. Crew egressed on taxiway. Flight doc examined, no illness.
- 29 November 2012 - Prior to refueling ASEs reported smelling fumes w/no smoke. Linked to MRK 500 power supply. Disabled system. No O2. Primary impact on COMINT section.

RC-135W 62-4139

- 1 April 2014 - LAN switch power supply sparked & emitted smoke. ASEs shut off power & removed equipment. No ill effects, continued flight.

RC-135V 64-14843

- 8 October 2016 – 23 mins after takeoff, crew noted smoke and fumes emanating from electrical rack between forward ASE and OPS stations. AMs and TC put recon area on O2, and both pilots. Isolated source. Dumped 30k fuel, RTB.
- 21 January 2016 - During cruise, crew noticed acrid smell coming from area near right aft hatch. Crew went on O2, ASEs sought source. Positions 7-12 shut off. Fumes stopped, but returned before repowered. Shut down all positions except 1/2, crew back on O2. Fumes dissipated, returned intermittently. Pilot elected RTB. 3 crewmembers treated after landing by flight doc, most severe placed on DNF status and given supp O2.

- 12 July 2013 – Crew smelled electrical odor around ASE MX station coming of station. Crew was unable to locate & Isolate. Crew went on O2 w/flight doc on board.
- 4 October 2012 – During preflight checks, navigator noticed electrical smell. Odor dissipated. Called MX to diffuse odor. Odor strengthened, blue smoke began to emanate from overhead insulation in flight deck. AI called for egress, turned AI power off. Successful egress. Two flight deck crewmembers had light headaches.
- 14 August 2012 – In orbit Melrose @FL280, abt 2 hrs into flight, TC smelled acrid smell from Pos. 23. Crew went on O2. Acrid smell increased, with electrical smoke. ASE 1 couldn't pinpoint specific component. Powered off OWS in Raven compartment. Smoke dissipated, smell lingered. RTB. Crew remained on O2, used gear and speed brakes to burn fuel, flew ILS to full stop. Cleared by fire chief.

RC-135V 64-14846

- 6 June 2013 – While on orbit the crew noticed a light electrical smell in the raven compartment coming from the flight deck avionics rack next to the nav station. The electric cabinet cooling circuit breakers opened while troubleshooting. The crew was unable to reset the circuit breakers and decided to return to base to prevent damage to the electrical equipment and to avoid losing important flt deck equipment. 13,000 lbs of fuel was dumped at the south dumping area. Appch & landing were uneventful.
- 26 December 2013 – During air refueling, NAV and IP smelled fumes and found glowing metal and smoke behind main circuit-breaker panel. Full crew went on O2 and cabin altitude was raised to 8,000 ft to dissipate fumes. A/C had ASEs start shutting down non-essential equipment to remove load due to glow coming from nonidentifiable CB or equipment. Smoke stopped and glow dissipated. Crew used minimal electrical equipment to RTB uneventfully.

RC-135V 64-14848

- 20 April 2015 – 3.5 hrs into flight over Gulf of Mexico, white smoke began issuing from CORVUS rack. Associated with monitor panel, which had negative voltage indications under patlet assembly.

RC-135U 64-14849

- 20 April 2015 – (2X April 2015) (Over Belgium) Fumes reported (but no smoke) coming from equipment rack

RC-135V 63-9792

- 10 October 2014 – On climbout approaching level off at FL230, Mission crew compartment reported fumes coming from position 14. All crewmembers donned oxygen and the pilot elected to declare an IFE and returned to base. After successful isolation of affected systems. No physiological effects encountered. Crew landed uneventful.

RC-135S 61-2663

- 4 November 2014 – Ground Abort for maintenance position light CB popped on taxi, so aircraft returned to chalks. Shutdown engines to troubleshoot and it returned on restart. At this time, we also noticed a fuel leak on the right wing, followed later by a burning smell coming from aft of CB bulkhead. The crew shut everything down and got off the jet. After the issue was resolved, the No. 3 LOX converter showed only dashes. All of these issues resulted in a cancel.

RC-135W 62-4125

- 22 November 2014 – Crew noticed acrid fumes from Aux seat. No circuit breakers popped. No system malfunctions. Crew went on oxygen. Unable to locate source of fumes. Returned to base. Dumped gas in NAHA Control 12,000 lbs enrout descent to full stop.

RC-135V 64-4842

- 4 February 2015 – Had fumes coming from the cockpit circuit breaker panel. Crew went on O2 and aborted back to RODN. Landed back at RODN and egressed the aircraft after clear of runway.

Another Source of Fumes

Another source of fumes comes from the equipment cooling package, also referred to as the PAC, PACK, or Air Cycle Machine (ACM). The following is a sample:

RC-135V 63-9792

- 26 January 2015 – 9 hours into the sortie, fumes propagated throughout the cabin. The source was isolated to the right pac. No visible indications were present. The pac was shutdown and left off for the remainder of the flight.

RC-135W 62-4125

- 11 Dec 2014 – Strong fumes from air conditioning packs on climbout, resulting in haze, teary eyes and burning airways. Reduced fumes by turning heat full cold. Crew donned O2 until fumes dissipated.

RC-135S 61-2662

- 25 November 2013 – Pressurized left pac on Taxi 29% N1 & acrid smell in recon compartment. Taxi back to park.

RC-135W 62-4126

- 27 May 2015 – During transition at KLNK, OP15 experienced sinus pressure under his left eye. After taking Afrin® and talking with AMS, TC and AC, OP15 felt good enough to continue the sortie. Approximately 10 minutes later, the crew experienced fumes in the cabin from the right hand pressurization Pack. The crew shut off both PX Packs and went on oxygen. Fumes subsequently subsided and crew elected to return to KOFF for a full stop. At the time OP15 was experiencing increased sinus pressure and requested to have a flight doc meet him upon landing. Crew declared an emergency for this physiological event and full stopped without further incident. Emergency responders met crew at the jet to evaluate OP15. Fire Chief also requested Crew to deplane in order to sweep the jet with infrared sensors. Everything checked OK.

RC-135W 62-4135

- 9 June 2014 – Post A/R, in the decent to FL240, recon comp reported fumes. Previously in the flight, recon had reported fumes from the LH pac while in the weather, so pilot had

crew don O2 masks and shut down LH pac. Fumes dissipated & crew continued with remainder of sortie. LH pac emitted fumes during engine run after landing.

RC-135V 64-4841

- 11 August 2013 – On mission egress, fumes were noticed by multiple crewmembers simultaneously. A hazy smoke followed the fume smell. Crewmembers began donning oxygen as they smelled the fumes. AC directed all crew to don oxygen masks at 100% and directed copilot to run smoke and fume elimination checklist. At this time a grinding noise was heard at approximately the midpoint of the cabin which seemed to be associated with the increasing smoke and fumes. Copilot increased cabin altitude to begin eliminating the smoke and fumes from the cabin. ASE3 identified the left Air Cycle Machine (ACM) as the source and directed pilots to deactivate the left ACM. Pilots deactivated the left ACM. The grinding noise immediately stopped and the smoke/fumes stopped increasing. After coordination with the recon area it became clear that the crew had identified the source of the smoke and fumes. Crew stayed on oxygen for approximately 10 more minutes to allow the smoke and fumes to clear. Crew was on oxygen for approximately 15 min total before the smoke and fumes dissipated. The crew made the decision to continue to OTHB and declare an emergency. The return cruise, decent and landing were uneventful. Upon landing the cabin had been clear of smoke and fumes for approximately 2 hours and the crew taxied the aircraft back to parking after being cleared by the fire chief. There were no physiological incidents associated with this event.

RC-135W 62-4138

- 10 December 2016 – During descent, fumes pervaded cabin from cockpit to recon area. Donned O2 after turning off right pack, which was written up in the forms for the previous 4 flights. Fumes dissipated. Crew on O2 for 10-15 min.

Liquid Oxygen System (LOX)

The LOX converters are physically located inside the pressurized cabin. The RC-135 contains neither a shutoff valve nor a quick disconnect (QD) to isolate the LOX converters from the cabin in the event of an oxygen leak. If an oxygen line in the cabin is leaking or becomes severed, oxygen can empty into the cabin at an uncontrolled rate. This condition will cause an oxygen-enriched environment similar to that of NASA's fatal 1967 fire inside the Apollo 1 space capsule.

(One liter of LOX equates to 860 liters of gaseous oxygen.) The following are examples of oxygen system problems on the RC-135 fleet:

RC-135S 61-2663

- 3 February 2015 – Flying @23,000' 10 NM north of Omaha, AMT noticed severe liquid oxygen leak above 5,000' and above 10,000' leak was so severe that LOX was spewing into AMT station covering entire position 17 panel overhead. Crew also heard popping sound w/no way to determine if it was arcing or temp differentials. Crew turned recon power off and dumped 31k lbs fuel. Lost approx. 70 liters LOX. Landed w/no issues.

WC-135W 62-3582

- 28 September 2016 – After takeoff, right main gear would not retract despite repeated attempts. RTB, dump 10k lbs fuel. O2 leaked during fuel dump, estimated loss 3 liters. Suspected from right side pilot's regulator. "Crew egressed on Taxiway Echo due to concerns of 848 (RJ) fire & LOX leak."

RC-135W 62-4139

- 7 February 2015 – Possible O2 leak. Req O2 leak check after servicing. At ENG start LOX read #1-18.2, #2-17.7 & #3-17.2 = 53 total. 2 hrs into sortie O2 level dropped to #1-9.2, #2-9.3 & #3-17 = 35 total.

RC-135W 62-4132

- 20 January 2014 – After air refueling, crew noticed #1 LOX converter showed 20.0L lower than T/O. The crew was instructed to check all regulators. All were checked and none were found to be on and flowing. The ASE2 then was instructed by the pilot to climb in the “hell hole” to observe the low tanks. After 2 hrs, #1 LOX reached 3.0L and stabilized. Then it was noticed #2 LOX converter was dropping at same rate. Pilot decided RTB OTBH. #2 LOX started dropping 1L every 10 mins. Dumped 26,000 lbs. fuel. Landed uneventfully 7 hrs 10 mins after takeoff.

RC-135V 64-4842

- 8 November 2017 – **REDBALL** No. 2 LOX converter has high consumption.

RC-135V 64-14843

- 23 April 2016 – Liquid Oxygen in tank no.1 and no.2 is leaking. No. 1 tank leaked at 4.5 liters/hr and no.2 at 1.5 liters/hr. Checked converters in hell hole and two of them had frost on them.

RC-135V64-4846

- 13 September 2016 – **REDBALL** No.2 LOX converter lost 15 liters
- 21 May 2017 – No. 2 LOX converter lost 5 liters in flight.

RC-135W 62-4125

- 4 February 2015 – Prior to departure, we had LOX around 71 L. @ cruse we recorded 49.3 on the Lox. Icing on the bottles noticed. All regulators checked W/ on 100%, no flow & good pressure. Crew elected to return to base. Dumped 29,400 lbs in holding @ DVR 168/20. Full stop landing.

RC-135V 64-14848

- 30 April 2017 – Fire started in tail section of aircraft behind galley refrigerator. Takeoff aborted, crew egressed, fire trucks extinguished fire, which burned through skin of aircraft. Leak in LOX system fueled fire.

WC-135S 61-2663, lost nearly 70 liters of LOX while in flight on 3 February 2015. The discrepancy documented in IMDS read, "POS [position] 17 PANEL FAULTED. O2 LEAKING FROM BEHIND PANEL. 40L [liters] LOST WITHIN 10 MINUTES."

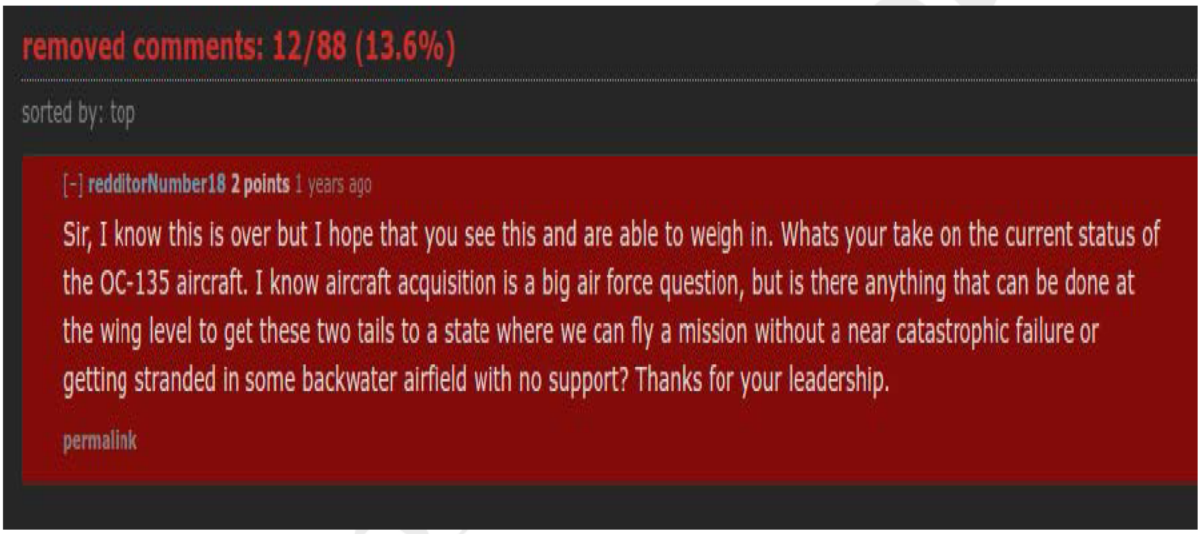
The next day, the same aircraft, 61-2663, aborted a mission. The discrepancy read, "POSITION 16 O2 REGULATOR HOSE LEAKING." I calculated the amount of loss to be 22 liters in approximately three hours.

These two discrepancies correspond with 55th SEF #15075 (3 February 2015) and 55th SEF #15079 (4 February 2015). The second leak was preventable and should have been detected during the leak check following maintenance for the original discrepancy, dated 3 February 2015. Both leaks were inside the Cabin.

When an aircraft sets on the ramp 'closed up' for an extended period of time, a simple device called an oxygen gas detector, if mounted inside the cabin, could detect elevated concentrations of oxygen due to oxygen system leaks. No such devise exists on the RC-135s.

Commander's Call via *Reddit*

On or about 12 January 2016, Col. George "Marty" Reynolds conducted an electronic Commander's Call via the website, Reddit. The last question presented to Col. Reynolds concerned maintenance problems with the OC-135 while operating oversees. The post was removed within a few days. With help from a Reddit moderator, the last question has been recovered. It read:



To the Boneyard

Congressman Don Bacon, (R-Neb.) was previously known as Brigadier General Don Bacon. General Bacon made a career of the Air Force by popping in and out of command positions – including at Offutt AFB, Nebraska. From March 2011 through July 2012, he served as the 55th Wing Commander. As such, he was in a position to correct the maintenance problems described throughout this manuscript — but didn't. As a Congressman, however, and only after the Open Skies mission was threatened with termination, did Congressman Don Bacon take action.

In a press release from the Office of Congressman Don Bacon, dated 24 July 2018, Bacon wrote, "It was great to work with Senator Deb Fischer (NE) to ensure the safety of our aircrews by securing the funding for replacement of the OC-135s at Offutt that are 57 years old." Bacon continued, "These aircraft are used as part of the Open Skies Treaty and have broken down

in Russia, putting the safety of our men and women in uniform at risk. They are an important part of the 55th Wing at Offutt and the security of our nation." (Bacon Fights for Funding to Replace 57-Year-Old Planes at Offutt)

In March 2020, Congressman Don Bacon, the former 55th Wing Commander, and now a member of the House Armed Services Committee stated, "By not recapitalizing the Open Skies aircraft, we are adding risk to our aircrews. The current aircraft are old, have bad maintenance rates and are prone to breakdown in Russia, putting our crews in bad situations where they are harassed by Russian authorities," (4 March 2020, Defense News)

On 22 November 2020, the United States officially withdrew from the Open Skies Treaty. Subsequently, in early 2021, both OC-135 aircraft were declared "excess" and sent to the Military Aircraft Storage and Disposition Center (MASDC) at Davis-Monthan AFB, Arizona. (The Boneyard) During retirement ceremonies for the OC-135, guest speakers told harrowing stories of maintenance disasters while flying the Open Skies aircraft. (Offutt squadron retires the last 'old and irritable' Open Skies jet) (June – July 2021)

In 2008, I had made a protected disclosure to both Congress and the DoD OIG regarding aircraft maintenance deficiencies within the 55th Wing, including problems with both OC-135s. The last paragraph on the cover page of my disclosure read, "A public release of the following information could have international consequences, especially to the Foreign Nationals who fly on, and trust that the two Open Skies aircraft are airworthy." In my opinion, the Boneyard is the best place for both OC-135s. Thankfully, no one died.

Summary

Some aviation experts suggest that the maintenance problems of the 55th Wing exist because of the aircraft's age. I disagree. I concede that age is a factor, but I strongly argue that the main culprit is faulty maintenance practices coupled with inadequate training — and managers who encourage low standards in exchange for 'on time' delivery of aircraft that are far from airworthy. With respect to the military managers of the 55th Wing; they are mechanically ignorant, self-serving individuals focused on achieving their next rank.[90]

If an Offutt assigned C/KC-135 variant were to crash, this manuscript, combined with the news articles published by *The Kansas City Star* and the excellent investigative journalism performed by the *Omaha World-Herald*, will likely become useful in civil court proceedings. As for me, I have done all that I can.

[90] Comment of MSgt George Sarris to: **Arms Control Wonk**; **Adios, Open Skies Treaty** by Michael Krepon, June 7, 2021. https://www.armscontrolwonk.com/archive/1211983/adios-open-skies-treaty.

What Whistleblowing Felt Like

Imagine that someone were to quietly sneak up behind you, then shout loudly, **"Boo!"** For a brief moment, all of your muscles twinge and your heart pounds. It's the old "fight or flight" reflex. Then you laugh it off after realizing it was all in jest. That's what whistleblowing feels like, only you never laugh it off, and the scared feeling never goes away. For me, that scared feeling was in the region of my diaphragm and my heart. My brain was stuck in a dangerous, never-ending, internal conflict.

I was summoned for a 'random' drug test just a few days after blowing-the-whistle. There were definitely co-workers who wanted to see me fired, so I constantly worried about someone placing banned substances into my food or drink. I developed a habit of covering my coffee cup with my hand. If I left it unattended – even for a second – I would dump out the coffee, rinse my cup, and then refill it. I consumed only the food that I brought from home which I kept locked in my car until lunchtime. I never left a car window cracked-open for fear that someone would slip a banned substance into my car. I even stashed cash away in a safe place just in case I had to make a quick getaway.

My nights became a three-day sleepless cycle. When I tried to sleep, I could hear and feel my heart beating at an elevated rate. My mind raced endlessly with worry of an aircraft accident because I had become too scared to report additional non-airworthy conditions. By the third night of this cycle, I was so mentally and physically exhausted that my body had no choice but to "crash" only to wake up three hours later with that scared feeling still lingering. Medication became necessary to attain normal sleep and has become a lifetime disability.

Diarrhea was the first order of business on most mornings — perhaps because the only sustenance I found desirable were bananas and coffee. I lost 15 pounds within the first few months and had to force myself to eat. I bottomed out at an unhealthy 131 pounds. Even soda pop and water became undesirable. I developed a rough whispering voice as my mouth dried out at the slightest hint of additional stress. I also experienced a periodic unpleasant sensory sensation so strange that I can't describe it, other than to say, it seemed to involve the nasal cavity, came on in an instant, then faded over the next few minutes.

I managed to disguise my feelings well, but I felt like crap. I felt like I did when my wife was diagnosed with cancer and was expected to die. These feelings, and the physical characteristics that came with them, consumed my life for nearly four years. Still, and for the rest of my life, I will never again feel secure.

Having been through this experience, I am compelled to rewrite one sentence from my original disclosure to Congress. "It is less stressful to let someone die than it is to endure the

harassment, intimidation, reprisal, backstabbing, threats, sleepless nights, depression, isolation, and a lifetime of worker/management tensions that result from blowing-the-whistle."

Inference

To be "coined" is to receive a token of appreciation from an esteemed official or organization for doing something of excellence. Coins vary in size, usually comparable to the diameter of a half dollar or silver dollar. Most coins are colorfully decorated with the insignia of a major command, or perhaps the office or name of the individual presenting the coin. To some people, coins have become a coveted prize.

In the beginning, I was held in high esteem by Offutt AFB management and was presented with various maintenance awards. By 2007, I had become the bastard child of the 55th Wing. I was so hated by management, that from 2008 through 2011, they tried to terminate my employment. Yet, in 2012, I was coined by Command Sergeant Major Patrick Z. Alston, Command Senior Enlisted Leader (USSTRATCOM). In 2013, I was coined again; this time by the HQ ACC IG Team. So what was the attack on my character all about? It was the typical diversion orchestrated by management to draw attention away from the problems reported by a whistleblower.

Image of the coin presented to Mr. George Sarris by the ACC IG Inspection Team in September 2013 for, "The best equipment maintenance program seen to date."

Addendum
Russia – Ukraine War

On 24 February 2022, Russia's President, Vladimir Putin, ordered an invasion of Ukraine. The threat of a nuclear incident involving the defunct Chernobyl nuclear plant, was very real.

Two days earlier, the Air Force's only remaining nuke-sniffer, WC-135W 61-2667 assigned to the 55th Wing, performed down to its lowest standards. On 22 February 2022, while on a real-world mission over the Baltic, the WC-135 experienced a familiar in-flight emergency. The Inflight Incident Worksheet reads as follows:

> WHILE ON STATION CREW IDENTIFIED A RIGHT HYDRAULIC SYSTEM QUANTITY DECREASE. WHEN THE QUANTITY DECREASED BELOW 2 GAL THE CREW DEPRESSURIZED THE SYSTEM. THIS ACTION SAVED ENOUGH TO ALLOW FOR A NORMAL ACTUATION ON LANDING. ERRING ON THE SIDE OF CAUTION THE CREW DECLARED AN IN FLIGHT EMERGENCY AND REQUIRED AN EXTENDED FINAL TO ALLOW FOR ELECTRIC FLAP OPERATION.

Hundreds of additional malfunctions concerning the sole remaining WC-135 are depicted in the Pilot Reported Discrepancies dated 2018 thru February 2022. The numbers in parentheses ( ) represent the job control number assigned to that particular discrepancy. **REDBALL** is a term used by the US Air Force, typically on the flight line, to identify supply or service requests that are needed urgently to avoid mission failure, and thus given the highest priority.
This is **not** an all-inclusive list.

(210059615)	**REDBALL** #1 KDU INOP
(210219616)	**REDBALL** #1 FIRE DETECTION LIGHT WILL NOT ILLUMINATE
(212990148)	**REDBALL** FD3 SHOWS MD 11 FAULT
(212799615)	**REDBALL** STAB TRIM WHEEL RETAINER ROD FELL OUT
(220109616)	**REDBALL** RT HYD SYS REQ SERVICING
(220159615)	**REDBALL** #2 ENG WILL NOT START

And so on…

Photograph by Todd Feeback (*Kansas City Star)*

About the Author

George Sarris enlisted in the United States Air Force in the spring of 1977 as a tactical fighter aircraft mechanic. In 1985, he was awarded a Bachelor of Science degree from Embry-Riddle Aeronautical University with a major in Professional Aeronautics. Following completion of the required curriculum, the FAA granted Mr. Sarris an airframe and powerplant license.

In 1986, Mr. Sarris gained employment as a dual-status technician for the Air National Guard. Over the next sixteen years, he maintained the pneudraulic systems of the RF4-C and the KC-135 aircraft. He volunteered for no-notice deployments, taking part in the Kosovo Campaign as well as Operation Enduring Freedom.

Mr. Sarris transferred to the Federal Civil Service in 2002, where he became the senior mechanic maintaining variants of the RC-135 aircraft at Offutt AFB, Nebraska. During this same period, he transitioned to a traditional status in the Air National Guard and provided training to mechanics converting to the KC-135 airframe. Mr. Sarris retired from the Air National Guard in 2005 after serving for twenty-eight years. He continued to work as a civilian mechanic for the Air Force on the RC-135 aircraft maintenance program until he blew the whistle on the 55th Wing for utilizing aircraft that were not airworthy.

In 2012, Mr. Sarris became the vice president of AFGE Local 1486, representing the Wage Grade employees of Offutt AFB, including the civilian mechanics of the aircraft maintenance squadron. Mr. Sarris retired from the Federal Civil Service in 2014.

Synopsis

I revealed to Congress in 2008 that the United States Air Force was operating a fleet of reconnaissance aircraft (RC-135s) that were not airworthy. To divert attention away from the maintenance issues that I had reported, the agency retaliated with an immediate attack on my character. The diversion included a trip through the Pentagon, Congress, and the Nebraska State Court system. Eventually, government investigations substantiated the non-airworthy conditions that I had reported, but not before the United States had secured a 1.3 billion-dollar foreign military sale to the United Kingdom for the same type of aircraft.

The agency suspended my security clearance and refused to provide me with the derogatory information it had compiled against me. After 17 months, I conducted a one-man, lawful and peaceful protest at the off-base residence of Lt. Col. Dana C. McCown, the Aircraft Maintenance Squadron Commander of the 55th Wing. My protest broke the stalemate when McCown petitioned the Sarpy County District Court for a harassment protection order against me. Through civil court actions, I was able to prove that McCown and her partner (Ms. Dawn A. Tanner) lied to local law enforcement officials and federal investigators, which paved my way to a global settlement in April 2011. (Click here for May 2011 press release)

My security clearance was adjudicated in April 2012. Although a federal administrative law judge recommended the reinstatement of my security clearance, the Personnel Security Appeals Board (PSAB) chose to disregard his recommendation.

Through these events, I stumbled upon a breach of national security involving two major commands spanning several decades. When I reported this security breach to senior defense officials, a "be on the lookout" (BOLO) was issued against me by the 55th Wing security forces. The BOLO violated the terms of the settlement and challenged my authority to act as a union officer of AFGE Local 1486.

Congress and the U.S. Justice Department clearly demonstrated an unwillingness to protect me from prohibited personnel practices (5 U.S.C. § 2302).

Now that I have retired, I provide this information to demonstrate the manner in which government agencies employ the use of harassment, intimidation, and reprisals to control the federal workforce when managers fear that they have been caught doing something unethical or illegal.