



DEPARTMENT OF THE NAVY

COMMANDER STRIKE FIGHTER WING

U.S. PACIFIC FLEET

001 K ST BLDG 1 RM 121

NAS LEMOORE CA 93245-5002

5830

Ser N00/258

1 Nov 19

FIRST ENDORSEMENT on CDR (b) (3) (A), (b) (6) ltr of 8 Sep 19

From: Commander, Strike Fighter Wing, U.S. Pacific Fleet

To: Commander, Naval Air Force, U.S. Pacific Fleet

Subj: COMMAND INVESTIGATION INTO THE CLASS A FLIGHT MISHAP ON 31 JULY 2019

Ref: (a) JAGINST 5800.7F CH-1

Encl: (1) Command Investigation into the Class A Flight Mishap of 18 Sep 19 w/ Enclosures

1. The Investigating Officer conducted a thorough and impartial investigation regarding the mishap that occurred on 31 July 2019 in Death Valley National Park. The mishap resulted in the death of LCDR Charles Z. Walker, USN, the complete loss of one F/A-18E assigned to Strike Fighter Squadron ONE FIVE ONE (VFA-151) at Naval Air Station Lemoore, and injuries to crash site bystanders that were French foreign nationals.

2. I concur with the facts, opinions, and recommendations contained therein.

3. I have directed that the findings of this investigation will be widely shared with all units under my cognizance to underscore the unforgiving and inherently dangerous nature of naval aviation, which requires the finest sense of judgment and control.

4. The point of contact for this matter is CDR (b) (3) (A), (b) (6) JAGC, USN, who can be reached at (b) (3) (A), (b) (6)

(b) (3) (A), (b) (6)

J. S. BATES

Copy to:

COMCARSTRKGRU THREE

18 Sep 19

From: CDR (b) (3) (A), (b) (6) Investigating Officer
To: Commander, Strike Fighter Wing, U.S. Pacific Fleet

Subj: COMMAND INVESTIGATION INTO THE CLASS A FLIGHT MISHAP ON 31 JULY 2019

Ref: (a) JAGINST 5800.7F CH-1, Chapter II
(b) CSFWP Standard Operating Procedures
(c) VFA-151 SOP
(d) CSFWP NAS Lemoore Inflight Guide (Mar 2016)

Encl: (1) CSFWP Appointing Order of 26 Aug 2019
(2) Preliminary Inquiry of 15 Aug 2019
(3) Copy of original VFA-151 flight schedule of 31 Jul 2019
(4) Copy of smooth VFA-151 flight schedule of 31 Jul 2019
(5) Copy of smooth VFA-151 flight schedule of 30 Jul 2019
(6) R-2508 Complex Daily Brief Sheet of 31 Jul 2019
(7) R-2508 Complex Daily Brief Sheet of 31 Jul 2019, Change I
(8) R-2508 Complex Daily Brief Sheet of 31 Jul 2019, Change II
(9) CSFWP Inflight Guide
(10) R-2508 User's Brief
(11) R-2508 User Handbook
(12) CSFWPINST 3710.9I Core SOP
(13) March, April, May, June, and Jul 2019 SHARP logbook reports for LT Charles Walker,
IISN

(b) (3) (A), (b) (6)

(19) Naval Aviator Aviation Training Jacket (ATJ) Summary Card for LT Charles Walker, USN
(20) NATOPS Evaluation Report for LT Charles Walker, USN
(21) NATOPS Instrument Rating Request for LT Charles Walker, USN

(b) (5)

(24) Maps of flight overview and impact area

(b) (5)

(28) Flight profiles from NAVAIRSYSCOM review of 30 Jul 2019 flight data
(29) MIST Infield Report
(30) Voluntary statement of LT (b) (3) (A), (b) (6) USN
(31) Voluntary statement of CDR Chad Heirigs, USN
(32) Voluntary statement of LT (b) (3) (A), (b) (6) USN
(33) Voluntary statement of LCDR (b) (3) (A), (b) (6) USN

(34) Statements to National Park Service from French national observer, with translation

(b) (3) (A), (b) (6)

(b) (3) (A), (b) (6)

(39) Email correspondence summary of Mr. (b) (3) (A), (b) (6) NAVAIRSYSCOM Engineer

(40) Email conversation summary with CDR (b) (3) (A), (b) (6) USN

(b) (3) (A), (b) (6)

(b) (3) (A), (b) (6)

(43) Aviation Maintenance Supply and Readiness Reporting (AMSRR) database report for VFA-151 31 Jul 2019

(44) Printout of maintenance status tracker for VFA-151 30 Jul 2019

(45) Historical weather for R-2508 on 31 Jul 2019

(b) (3) (A), (b) (6)

Preliminary Statement

1. Pursuant to enclosure (1) and in accordance with reference (a), I conducted a command investigation into the events and circumstances surrounding the Class A flight mishap that occurred on 31 July 2019 in Death Valley National Park. The mishap resulted in the death of LT Charles Walker, USN, the complete loss of one F/A-18E assigned to Strike Fighter Squadron ONE FIVE ONE (VFA-151) at Naval Air Station (NAS) Lemoore, and injuries to crash bystanders. All interview notes are attached in summary-form and available for your review. I consulted in the preparation and conduct of the investigation with the assigned legal advisor, LT (b) (3) (A), (b) (6) JAGC, USN. All reasonably available and relevant evidence was collected in compliance with the convening authority's directives. The purpose of the investigation was to find the cause of the mishap, assign fault, if any, and recommend appropriate command actions, including remedial safety and training actions.

2. The investigation found that at 0943 local time on 31 July 2019, an F/A-18E impacted the ground on the south side wall of Rainbow Canyon in Death Valley National Park, CA. The aircraft, BUNO 168471, was destroyed and the pilot, LT Charles Z. Walker, was killed. This investigation concludes that a failure to recognize a dangerous flight profile with respect to terrain proximity resulted in the loss of the aircraft and death of the pilot. The aircraft is believed to have entered a flight profile which was too fast and too low with respect to the surrounding terrain. The flight profile created conditions where the processing time and subsequent reaction time required of the pilot made it difficult for the aircraft to exit the canyon safely, as evidenced by the mishap result.

3. With very minor exceptions in memory recall, all voluntary statements collected are consistent with the above narrative of events. All statements were provided voluntarily and interviews include signed summaries of the interview. Naval Air Training and Operating Procedures (NATOPS) jackets and flight logbooks for the mishap pilot were reviewed by the investigating officer and are held by the aviation mishap board (AMB). All other applicable evidence is provided in the enclosures. Photographs and video are stored on removable media. Raw video footage from a GoPro video camera onboard the mishap wingman's aircraft contains classified content and is not included.

Findings of Fact

1. One F/A-18E aircraft, BUNO 168471 was destroyed during a flight mishap between 09:43:35 and 09:43:38 local time, 31 July 2019. [Encls. (1), (2), (26), (27), (30), (34)]
2. LT Charles Z. Walker, USN, was killed as a result of the mishap. [Encls. (1), (2), (26), (27), (30), (34), (35)]
3. LT Walker had flown 2049.6 military flight hours. LT Walker's 30/60/90 day summary was 5.1/38.3/59.8 flight hours respectively, with seven flights flown in the low level training environment within the last 90 days prior to the mishap. [Encl. (13)]
4. The mishap pilot was a designated Naval Aviator (1310) and was both NATOPS and instrument qualified in the F/A-18E/F Super Hornet at the time of the mishap. [Encls. (20), (21)]
5. The mishap pilot was fulfilling orders as the Training Officer to VFA-151, was a graduate of TOPGUN, and had a Strike Fighter Weapons and Tactics (SFWT) Level 4I qualification. [Encl. (31)]
6. The mishap pilot was medically qualified and aeronautically adapted for flight. [Encls. (22), (23)]
7. LT Walker was married with no children. He and his wife were married on 31 March 2018. At the time of the mishap, LT Walker's wife was living near Seattle, WA. [Encls. (17), (18), (30)]

Pre-Flight / Mission Planning

8. LT Walker mustered normally in VFA-151 spaces on 31 July 2019. Squadron personnel noted nothing unusual about LT Walker's behavior that morning or leading up to the mishap. [Encls. (14), (30), (32)]
9. LT Walker was designated as Mission Commander for the mishap flight. LT Walker briefed his wingman, LT (b) (3) (A), (b) (6) USN, for VFA-151 event one, a two-ship flight with the air traffic control call sign of Switch 11, in VFA-151 mission planning spaces at 0730 local time. [Encls. (3), (30), (32)]
10. The flight was scheduled to fly the VR-209 military training route as authorized/approved by CDR Chad Heirigs USN, Commanding Officer, VFA-151. The mission was changed to the R-2508 range training complex and the Sidewinder low level route due to weather in the vicinity of VR-209. [Encls. (3), (4), (6), (9)]
11. LT Walker briefed a plan to first execute low level training on points A through C and the Jedi transition along the Sidewinder low level route within the R-2508 range training complex, followed by air-to-surface training, followed by air-to-air training if time allowed. [Encls. (3), (4), (6), (30)]
12. LT Walker was current in the aircraft according to NATOPS and Commander, Strike Fighter Wing, U.S. Pacific Fleet (CSFWP) requirements. LT Walker was not Low Altitude Training (LAT) current. LT Walker had flown the day prior, 30 July 2019, in the LAT environment, but not for the minimum 10 minutes in the low altitude environment in the last 30 days. [Encls. (12), (13)]

Subj: COMMAND INVESTIGATION INTO THE CLASS A FLIGHT MISHAP ON 31 JULY 2019

13. LT Walker's lack of currency in the LAT environment was addressed in the brief, whereby LT Walker assigned a minimum altitude (MINALT) of 500 feet above ground level (AGL) for himself, and cleared his wingman, LT Slater, to a MINALT of 200 feet AGL if desired, as LT Slater was LAT current. [Encls. (12), (13), (30)]

14. The flight brief lasted approximately 30 minutes and all pertinent and mandatory items were briefed. [Encls. (6), (30)]

15. LT Walker was considered to be the most LAT proficient pilot in the squadron, having flown seven times in the low level environment in the three months preceding the mishap. CDR Heirigs and LCDR (b) (3) (A), (b) (6) emphasized that the "low level" flight was likely a favorite mission of LT Walker and that he was very thorough in his preparation for the LAT mission. [Encls. (13), (30), (31), (33)]

16. The mishap aircraft was released safe-for-flight (SFF) by VFA-151 maintenance personnel with zero downing discrepancies with appropriate daily and turnaround inspections. [Encls. (41), (42), (43), (44)]

17. Aircraft 168471 was configured for the flight with a centerline external fuel tank, an ATFLIR, and 3 pylons (Station 6, 2, and 10). No internal or external ordnance, items, or other carriage devices were on the mishap aircraft. [Encls. (41), (42), (43), (44)]

Flight and Mishap

18. The mishap flight was scheduled for a 0915 local time launch. Actual launch occurred at approximately 0914. [Encls. (3), (4), (30)]

19. The mishap flight executed a takeoff on 32R at NAS Lemoore and flew the Hornet 5 stereo route, proceeding generally SW before entering R-2508 at point ROMOF. [Encls. (4), (11), (24), (30)]

20. Range R-2508 is located in the upper Mojave Desert of southern California, and includes airspace over Death Valley National Park. Father Crowley Overlook is within Death Valley National Park and is a popular viewing point for ground observers to watch aircraft transit the Sidewinder low level route. The terrain is uninhabited mountainous desert terrain. [Encls. (9), (10), (11), (24), (31), (34)]

21. The weather in R-2508 was as forecasted with clear skies and unrestricted visibility. At 0943 local time the sun was at 99.77 degrees azimuth and 43.92 degrees altitude. [Encls. (25), (26), (27), (45)]

22. Once established in R-2508 and over the vicinity of Lake Isabella, California, the flight conducted a G-awareness maneuver and took a lead-trail formation of 1.5 NM to 2.5 NM spacing. LT Walker was lead; LT (b) (3) (A), (b) (6) was trail. [Encls. (9), (10), (11), (30)]

23. During the descent to the briefed low altitudes from point A to point B, the flight verbalized completion of the low altitude checklist. [Encls. (9), (10), (11), (30)]

24. Throughout the low-level environment, the LT (b) (3) (A), (b) (6) maintained 1.5 to 3.5 NM in trail of the lead, LT Walker, and the flight maintained an airspeed between 450 to 600 knots calibrated airspeed (KCAS). [Encls. (26), (30)]

Subj: COMMAND INVESTIGATION INTO THE CLASS A FLIGHT MISHAP ON 31 JULY 2019

25. The flight proceeded on the Sidewinder low level route from point C via the Jedi transition to the vicinity of point J. [Encls. (9), (10), (11), (30)]

26. The mishap aircraft entered Rainbow Canyon, commonly referred to as "Star Wars Canyon," from the west in a left turn, descending through 4,000 feet mean sea level (MSL), at approximately 550 KCAS, with afterburners staged, then rolled wings level in a slight descent. Then, approximately 3 seconds elapsed with no data or eyewitnesses. The mishap aircraft impacted the south side wall of Star Wars Canyon near the Father Crowley Overlook area, 46 nautical miles north of China Lake NAS, at Lat/Long: N 36.3545550 W 117.5456017 (N 36 21.2733 W 117 32.7361, 11SMA5104723412), elevation 4,102 feet MSL. The location is within Death Valley National Park and the R-2508 range training complex. [Encls. (10), (11), (24), (25), (26), (27), (30), (39)]

27. The mishap wingman did not see the mishap aircraft impact the ground. The wingman was in a hard right-hand pull at the time of impact and reversed left to roll wings level when he saw a huge ball of fire extending up in a column of fire and smoke. [Encls. (26), (30)]

28. The mishap wingman did not have the Cockpit Video Recording System (CVRS) on, or "tapes" on, during the time of impact. There is wingman video from a personal GoPro which shows the mishap aircraft explosion post-impact. [Encls. (26), (30)]

29. The mishap wingman attempted to hail the mishap pilot on the auxiliary frequency with no response. The wingman then transmitted on low level common frequency for all aircraft to remain clear of Star Wars Canyon. The wingman then coordinated SAR assets with Joshua Approach on R-2508 area common frequency. [Encl. (30)]

30. The mishap wingman remained overhead the impact location between 10,000 and 15,500 feet MSL as the on-scene mission commander until he returned to NAS Lemoore, landing at 1104 local time. [Encl. (30)]

31. LCDR (b) (3) (A), (b) (6) USN, and LCDR (b) (3) (A), (b) (6) USN, both of VFA-151, were operating aircraft in the R-2508 complex for a different mission and heard the radio communications with Joshua Approach before proceeding overhead the mishap location to assist. LCDR (b) (3) (A), (b) (6) and LCDR (b) (3) (A), (b) (6) were on a two-ship flight conducting red air simulation in the Superior Valley restricted area R-2524. [Encls. (3), (4), (30)]

32. LCDR (b) (3) (A), (b) (6) and LCDR (b) (3) (A), (b) (6) remained overhead to continue the coordination with SAR assets until returning to NAS Lemoore at approximately 1130 local time. [Encls. (3), (4), (30)]

Mishap Injuries and Response

33. Seven French nationals in the United States as tourists were taking photographs in various locations along the dirt road area to the east of the Father Crowley Overlook parking lot, on the south side wall of Rainbow Canyon when the mishap aircraft impacted. The French tourists were: (b) (3) (A), (b) (6) (m/57), (b) (3) (A), (b) (6) (f/56), (b) (3) (A), (b) (6) (f/26), (b) (3) (A), (b) (6) (m/24), (b) (3) (A), (b) (6) (m/20), (b) (3) (A), (b) (6) (f/23), (b) (3) (A), (b) (6) (m/26). [Encls. (34), (36), (37), (38)]

Subj: COMMAND INVESTIGATION INTO THE CLASS A FLIGHT MISHAP ON 31 JULY 2019

34. (b) (3) (A), (b) (6) witnessed the mishap aircraft prior to impact as it went below the horizon of the canyon wall. Upon impact, the French tourists began to run away from the explosion, but were unable to avoid the blast. All seven French tourists suffered non-life threatening burn injuries. All were treated for burn injuries of varying degrees. All survived and have, and/or are expected to, make full recoveries. All claims and medical costs are under the purview of the Claims and Tort Litigation Director, (b) (3) (A), (b) (6) (b) (3) (A), (b) (6) at the Office of the Judge Advocate General. [Encls. (34), (36), (37), (38)]

35. The first responders on the scene included National Park Service (NPS) personnel who took a witness statement from (b) (3) (A), (b) (6) Along with other first responders, NPS assisted with medical attention for the injured French tourists and coordinated the transfer of victims to Lone Pine Hospital in Inyo County. [Encls. (34), (38)]

Witnesses, Reconstruction, and Recovery

36. There is no known video or photographic evidence of the mishap aircraft at the time of impact. There are no known eyewitness accounts of the mishap aircraft at the time of impact. [Encls. (24), (25), (26), (27), (40)]

37. There is video and photographic evidence of the mishap aircraft in the seconds prior to impact taken by observers positioned west of the Father Crowley Overlook area. [Encls. (24), (25), (26), (27), (40)]

38. Names of civilian observers from the mishap location include (b) (3) (A), (b) (6) (b) (3) (A), (b) (6) [Encl. (40)]

39. Based on collected photographs and video taken by observers seconds prior to impact, Naval Air Systems Command (NAVAIRSYSCOM) estimated that the mishap aircraft was travelling at 550 KCAS, approximately 4000 feet MSL, in full afterburner, and descending in a slight left-wing down profile, at or less than one-G, prior to going out of view at location N 36.357093 W 117.558178. [Encls. (24), (25), (28), (39), (40)]

40. The distance from the location when the mishap aircraft goes out of view of ground-based video to the point of impact is 3,500 US feet, or 0.58 NM. At 550 KCAS, it would take approximately 3 seconds to travel from the point where the mishap aircraft goes out of view to the point of impact. [Encls. (24), (25), (28), (39)]

41. No useable flight recorded media was recovered from the mishap aircraft, to include Deployable Flight Incident Recorder Set (DFIRS), Digital Memory Device (DMD), Removable Memory Module (RMM), or MAINT Card. Although DFIRS was recovered, NAVAIRSYSCOM efforts to access files were unsuccessful due to the extent of the damage. The DMD, RMM, and MAINT Card were not recovered. [Encls. (39), (40)]

42. Based on DMD and MAINT Card data analyzed from the wingman aircraft, GoPro video of displays which included air-to-air TACAN information, and wingman accounts, LT Walker and LT (b) (3) (A), (b) (6) stayed within approximately 2-3 nautical miles of each other for the duration of the flight. The flight overview of the wingman aircraft is known from the time of launch through the time of impact until the wingman returns to base (RTB). [Encls. (24), (26), (30), (39)]

Subj: COMMAND INVESTIGATION INTO THE CLASS A FLIGHT MISHAP ON 31 JULY 2019

43. Ejection was not initiated. The Ejection Seat with catapult was properly installed in the cockpit at time of impact. The Ejection Seat Structure experienced severe ground impact damage. None of the Cartridge Actuated Device (CAD) or Propellant Actuated Device (PAD) items recovered were fired or actuated. All CAD/PAD items should have functioned as designed if actuated. No anomalies were noted to prevent ejection sequence. Aircrew restraint systems failed due to excessive crash loading. [Encl. (29)]

44. There was no toxicology report for the mishap pilot due to the lack of human remains available to conduct testing posthumously. The human remains recovered between 1 Aug and 16 Aug consisted of small amounts skin, hair, and bone. The Armed Forces Medical Examiner took custody of the human remains and determined the remains were not viable for toxicology testing. [Encl. (35)]

45. Aside from known flight events and LT Walker's leave schedule, the 72-hour summary of events prior to the mishap is largely unknown. [Encls. (3), (15), (16), (30), (31)]

46. The mishap pilot flew a similar flight profile the day before on event three of the 30 July 2019 VFA-151 flight schedule with CDR Chad Heirigs. [Encls. (28), (31), (39)]

47. On 30 July 2019, CDR Heirigs briefed an air-to-surface training mission in the R-2508 range training complex with LT Walker as his wingman. [Encls. (5), (31)]

48. Post-mission, the 30 July 2019 event three flight proceeded to the low level environment to execute the Jedi transition portion of the Sidewinder low level route prior to RTB. [Encls. (5), (28), (31)]

49. On 30 July 2019, LT Walker flew the same aircraft (BUNO 168471) with the same configuration as he did on 31 July 2019 (single centerline, outboard pylons only, ATFLIR, no ordnance/items). Downloaded data from the 30 Jul 2019 flight aircraft's MAINT card was processed by NAVAIRSYSCOM and showed a flight profile similar to the 31 July 2019 flight. [Encls. (5), (28), (31), (39)]

50. On 30 July 2019, LT Walker flew into Star Wars Canyon from the west and performed a ridgeline crossing over the south side wall. The ridgeline crossing occurred east of the 31 July 2019 impact location approximately 1,500 US feet east along the south side canyon wall. LT Walker crossed the ridgeline at 290 feet AGL travelling at 570 KCAS while pulling 1.6 G's. [Encls. (5), (28), (31), (39)]

51. The investigating officer flew several iterations of LT Walker's estimated 31 July 2019 flight profile in the simulator. Attempts to recover from the estimated flight profile resulted in controlled flight into terrain (CFIT) on 30 percent of the simulated runs. [Encls. (24), (28), (39)]

Opinions

1. LT Walker was adequately prepared, had proficient knowledge of the low level route despite a change in plan from the VR-209 low level route to the Sidewinder low level prior to the brief. [FF (3), (4), (5), (6), (8), (9), (12), (15-17), (23), (46-50)]

2. The pilot did not experience a G-induced loss of consciousness (GLOC) or an almost g-induced loss of consciousness (ALOC) based on the flight control movements and flight pattern witnessed in the observer video. [FF (24), (37), (39), (42)]

3. LT Walker did not commit suicide. Squadron personnel conveyed, and evidence suggests, that LT Walker had a desire to live and no known suicidal ideations existed. [FF (6-8), (15), (40)]

4. LT Walker entered a flight regime within which he could not safely escape given the proximity of the aircraft to the surrounding terrain. The airspeed of the aircraft was estimated to be 550 KCAS when last seen 0.58 NM from the impact location. At 550 KCAS, it would take 3 seconds to travel 0.58 NM. The aircraft was also thought to be accelerating, as it was in full afterburner descending in a slight nose down flight path angle at, or less than, one G. Attempts to recover from this specific, although estimated, flight profile in the simulator resulted in controlled flight into terrain (CFIT) on 30 percent of the runs executed. Although not scientifically rigorous, the simulator runs did illustrate that the flight profile was difficult to escape from an impending CFIT result. [FF (37), (39), (40)]

5. It is possible that LT Walker intended to fly through Star Wars canyon as most aircraft do – through the center of the canyon maneuvering to stay between and below the canyon walls until exiting to the east into the northern portion of Panamint Valley. However, evidence suggests that LT Walker intended to fly a similar flight path on 31 July 2019 as he did on 30 July 2019. On the date of the mishap he was faster, lower, and accelerating while descending prior to his attempt to cross a ridgeline that was approximately 500 feet higher than the day prior. LT Walker may have attempted to turn level through the canyon, realized his turn radius would be too great to navigate safely due to his speed and attempted a vertical pull to exit the canyon. Based on current information, we will never know what actually occurred. [FF (46), (48), (49), (50), Encls. (24)]

6. There is no evidence suggesting that LT Walker was “flat-hatting” – flying at low-altitudes for thrills. There is no evidence to suggest that he pre-coordinated with aviation enthusiast photographers on the ground for a photo opportunity. [Encls. (30), (31), (33), (39)]

7. LT Walker did not depart controlled flight in the aircraft prior to impacting the ground. His aircraft was travelling at well-above corner airspeed, at approximately 550 KCAS and accelerating. Any attempt to pull back on the stick in an effort to achieve a positive flight path angle would have reduced airspeed, however it would also have induced a positive rate of climb to clear the ridgeline. [FF (24), (37), (39), (42)]

8. LT Walker did not have poor visibility due to shadowing of terrain and therefore did not lose the ability to discern distance from terrain resulting in CFIT. At 0943 local time on 31 July 2019, the sun was at 99.77 degrees azimuth and 43.92 degrees altitude. The sky was clear and visibility was unrestricted. The photos illustrate the lack of shadowing from similar visual direction as the mishap aircraft prior to impact. [Encls. (25-27), (45)]

9. There is a potential for aircrew to be complacent when preparing to fly the Sidewinder low level route due to the relative ease of mission planning, availability, familiarity, and common use of the route by local area aircrews. [Encls. (9-11)]

10. All aircrew interviewed were forthright and honest with regard to the mishap. There was no attempt to conceal events through manipulation of their witness accounts or flight data. All interviewees were compliant and willing participants in the investigation. [Encls. (30-40)]

Subj: COMMAND INVESTIGATION INTO THE CLASS A FLIGHT MISHAP ON 31 JULY 2019

11. The squadron culture promotes and complies with adherence to the rules and regulations with regard to flight operations. [Encl. (31)]

Recommendations

1. No administrative or disciplinary action is warranted in this case.
2. The findings of this investigation should be widely shared as an example of the unforgiving nature of naval aviation and the fact that a brief lapse in judgement can produce catastrophic results.

(b) (3) (A), (b) (6)

CDR C. J. HEIRIGS
COMMANDING OFFICER



VFA-151

FLIGHT SCHEDULE



"FIGHT UGLY"

CDR M. E. DAVIN
EXECUTIVE OFFICER



Wednesday
31-Jul-2019 (9212)
SBO: (b) (3) (A), (b) (6)
ODO: (b) (3) (A), (b) (6) (1230-1400)

SR: 0606 SS: 2006
MR: 0526 MS: 2009
ILL: 1%

EVT	BRF T/O LND	C/S	CFG	FUEL	ORD	A/C	PILOT	MSN	RTE	AREA	FREQ	TN	RMKS	TIME DY/NT
1	0730 0915 1100	SH11	A A	17.6 17.6			Walker (b) (3) (A), (b) (6)	LOW LEVEL	DD-175	VR 209 0945-1030 EVT#3101	1	14140 14141		/
2	0810 0940 1120	SH21	A A	17.6 17.6	1 1			RED	H5	R-2508/SUP VAL 1000-1100	2	14142 14143	1,2,3	/
3	1015 1200 1315	SH31	A A	17.6 17.6	1 1			BFM	H41	W-283/285A 1145-1300 EVT #1033154	1	14144 14145		/
4	1615 1815 1930	SH41	A A A A	17.6 17.6 17.6 17.6	1 1 1			TACINT	H41	W-283/285A 1830-1930 EVT #1033489	2	14146 14147 14150 14141	4	/

SIMULATORS

No Simulators Scheduled

EP : L/R EGT HIGH.
NATOPS : HOW IS EMERG NWS ENGAGED?
TACTICAL : SA-2 STUDY.

	DAY	NIGHT	TOTAL
FLIGHT TIME SCHEDULED:	14.8	0.0	14.8
FLIGHT TIME FLOWN:			
SORTIES SCHEDULED:	10	0	10
SORTIES FLOWN:			

CONFIGURATION:
A-SINGLE CENTERLINE

ORDNANCE:
1-CATM-9X

PILOT NOTES:
* MSN CDR
+ INSTRUCTOR
\$ DENOTES X
UI

REMARKS:
1-HP/HS
2-VFA-22 SFWT 3.19x
3-VFA-22 Red Lead, Brief at VFA-22
4-Brief at SFWSP

TIME	MEETING / EVENT	LOCATION
1145 - 1215	OPS / Maintenance Meeting	OPS Spaces
1245 - 1345	DH Meeting	Ready Room
1245 - 1400	SMT	SFWSP
1400 - 1500	CMN-4 Training	Ready Room
1500 - 1530	AOM	Ready Room
1530 - 1630	CO's Call	Ready Room
1530 - 1800	OPS Packout	OPS Spaces

PERSONNEL
All Required
CO, All Department Heads, CMC
(b) (3) (A), (b) (6)
Walker
All Pilots
All Officers
CO, All E-5's
All Available JOPA

GENERAL NOTES:
1. Leave: XO
2. FOD Walkdown: 0700

Drafted By:
(b) (3) (A), (b) (6)

Reviewed By:
(b) (3) (A), (b) (6)

Approved By:
(b) (3) (A), (b) (6)

For
LT (b) (3) (A), (b) (6)
Schedules Officer

LCDR (b) (3) (A), (b) (6)
Operations Officer

CDR C. J. HEIRIGS
Commanding Officer



VFA-151

FLIGHT SCHEDULE



"FIGHT UGLY"



Wednesday
31-Jul-2019 (9212)
SDO: (b) (3) (A), (b) (6)
ODO: (b) (3) (A), (b) (6) (1230-1400)

SR: 0606 SS: 2006
MR: 0526 MS: 2009
ILL: 1%

EVT	BRF T/O LND	C/S	CFG	FUEL	ORD	A/C	PILOT	MSN	RTE	AREA	FREQ	TN	RMKS	TIME DY/NT
1	0730 0915 1100	SH11	A A	17.6 17.6		400 406	* Walker (b) (3) (A), (b) (6)	LOW LEVEL	H5	R-2508	1	14140 14141		1 2.0/
2	0810 0940 1120	SH21	A A	17.6 17.6	1 1	410 411		RED	H5	R-2508/SUP VAL 1000-1100	2	14142 14143	1,2,3	1.8/ 1.8/
3	1015 1200 1315	SH31	A A	17.6 17.6	1 1	410 411	#	BFM	H41	W-283/285A 1145-1300 EVT #1033154	1	14144 14145		OPS
4	1615 1815 1930	SH41	A A A A	17.6 17.6 17.6 17.6	1 1 1	411 406 410 400		TACINT	H41	W-283/285A 1830-1930 EVT #1033489	2	14146 14147 14150 14141	4	OPS

SIMULATORS

No Simulators Scheduled

EP : L/R EGT HIGH.
NATOPS : HOW IS EMERG NWS ENGAGED?
TACTICAL : SA-2 STUDY.

	DAY	NIGHT	TOTAL
FLIGHT TIME SCHEDULED:	14.8	0.0	14.8
FLIGHT TIME FLOWN:			
SORTIES SCHEDULED:	10	0	10
SORTIES FLOWN:	4	0	4

CONFIGURATION:
A-SINGLE CENTERLINE

ORDNANCE:
1-CATM-9X

PILOT NOTES:
* MSN CDR
+ INSTRUCTOR
\$ DENOTES X
UI

REMARKS:
1-HP/HS
2-VFA-22 SFWT 3.19x
3-VFA-22 Red Lead, Brief at VFA-22
4-Brief at SFWS

TIME
1145 - 1215
1245 - 1345
1245 - 1400

MEETING / EVENT
OPS / Maintenance Meeting
DH Meeting
SMT

LOCATION
OPS Spaces
Ready Room
SFWS

PERSONNEL
All Required
CO, All Department Heads, CMC
(b) (3) (A), (b) (6)
Walker
All Pilots
All Officers
CO, All E-5's
All Available JOPA

1400 - 1500
1500 - 1530
1530 - 1630
1530 - 1800

CMN-4 Training
AOM
CO's Call
OPS Packout

Ready Room
Ready Room
Ready Room
OPS Spaces

GENERAL NOTES:

1. Leave: XO
2. FOD Walkdown: 0700

Drafted By:

Reviewed By:

Approved By:

LT (b) (3) (A), (b) (6)

Schedules Officer

LCDR (b) (3) (A), (b) (6)

Operations Officer

CDR C. J. HEIRIGS

Commanding Officer



VFA-151

FLIGHT SCHEDULE



"FIGHT UGLY"



Tuesday
30-Jul-2019 (9211)
SDO: (b) (3) (A), (b) (6)

SR: 0605 SS: 2007
MR: 0420 MS: 1915
ILL: 5%

EVT	BRF T/O LND	C/S	CFG	FUEL	ORD	A/C	PILOT	MSN	RTE	AREA	FREQ	TN	RMKS	TIME DY/NT
1	0730 0900 1000	SH11	A A	17.6 17.6	1 1	<u>406</u> <u>410</u>	(b) (3) (A), (b) (6)	BFM	VFR	NLC MOA D-E 0900-1000 EVT #22354	1	14140 14141		0.8/ 0.9/
2	0730 0900 1030	SH21	A,B A,B	17.6 17.6	1	<u>405</u> <u>400</u>		TGT ACQ	H1	R-2508	2	14142 14143		1.4/ 1.2/
3	1100 1230 1400	SH31	A,B A,B A,B A,B	17.6 17.6 17.6 17.6	1 1 1	<u>406</u> <u>400</u> <u>411</u> <u>410</u>	Walker	TGT ACQ	H1	R-2508	1	14144 14145 14146 14147	1	1.8/ 1.8/ 1.8/ 1.8/
4	1315 1445 1615	SH41	A,B A,B	17.6 17.6	1 1	<u>406</u> <u>410</u>	(b) (3) (A), (b) (6)	RED	H5	R-2508/SUP VAL 1500-1600	2	14150 14151	1,2,3	1.4/ 1.4/
5	1400 1530 1630	SH51	A A	17.6 17.6	1	<u>411</u> <u>400</u>		BFM	VFR	NLC MOA D-E 1600-1700 EVT #22374	1	14152 14153		0.7/ 0.7/

SIMULATORS

No Simulators Scheduled

EP : L/R ATS CAUT.
NATOPS : LIST 4 ITEMS NOT AVAILABLE WITH BOTH BLEEDS
TACTICAL : SECURED.
STATE LDMD.

CONFIGURATION:
A-SINGLE CENTERLINE
B-FLIR DESIRED

ORDNANCE:
1-CATM 9X

PILOT NOTES:
* MSN CDR
+ INSTRUCTOR
\$ DENOTES X
UI

	DAY	NIGHT	TOTAL
FLIGHT TIME SCHEDULED:	15.2	0.0	15.2
FLIGHT TIME FLOWN:	15.7	0.0	15.7
SORTIES SCHEDULED:	12	0	12
SORTIES FLOWN:	12	0	12

REMARKS:
1-HP/HS
2-Red for VFA-2 3 19x
3-VFA-14 Red LD, Brief at VFA-14

TIME

0830 - 0930
0830 - 0845
0845 - 0915
1530 - 1700
1530 - 1630

MEETING / EVENT

Training Officer Meeting
CMC Check-out
CO Check-out
SFWT 4 1L
CO's Call

LOCATION

CSFWP Conference Room
CMC's Office
CO's Office
Briefing Room #1
Ready Room

PERSONNEL

Walker
CMC, (b) (3) (A), (b) (6)
CO, (b) (3) (A), (b) (6) (0845-0900) (b) (3) (A), (b) (6) (0900-0915)
(b) (3) (A), (b) (6) Walker
CO, All E-4

GENERAL NOTES:

1. Leave: XO
2. FOD Walkdown: 0700

Drafted By:

Reviewed By:

Approved By:

LT (b) (3) (A), (b) (6)

Schedules Officer

LCDR (b) (3) (A), (b) (6)

Operations Officer

CDR C. J. HEIRIGS

Commanding Officer

R-2508 COMPLEX DAILY BRIEF SHEET

**DOES NOT INCLUDE ACTIVITIES SCHEDULED WITHIN
INTERNAL RESTRICTED AREAS**

R-2508 Website: <http://www.edwards.af.mil/Home/R-2508>

USAF SharePoint: <https://USAF.DPS.MIL/TEAMS/12162>

CCF After Hours Support: 1-866-805-2851

31 JULY 19

GPS TESTING EVENTS

FAA Public Notice Website: http://www.faa.gov/SPANS/notices_public.aspx

14 July – 02 August 2019, Nellis AFB, NV

15 July – 20 August 2019, Yuma, AZ

SCHEDULED REFUELING OPERATIONS

<u>DATE/TIME (Z)</u>	<u>AREA</u>	<u>ALTITUDES</u>	<u>UNIT BASE</u>
311730Z – 312200Z	ARISB	FL240 – FL260	EDW

SPECIAL ACTIVITIES/OPERATIONS

NATIONAL PARKS/FORESTRY SERVICE ACTIVITIES

CA-INF-1506 - CONCENTRATED ACTIVITIES - 301900Z – UFN

The NPS/FS will be conducting concentrated activities within a 5 mile radius of N36° 11' 58" and W118° 16' 47". Altitude is at or below 3000 AGL.

NATIONAL PARKS/FORESTRY SERVICE ACTIVITIES

CA-INF-1435 CONCENTRATED ACTIVITIES - 261500Z – UFN

The NPS/FS will be conducting concentrated activities within a 7 NM radius of N36° 17' 06" and W118° 13' 45". Altitude is at or below 4,000 feet AGL.

NATIONAL PARKS/FORESTRY SERVICE ACTIVITIES

CA-INF-903 CONCENTRATED ACTIVITIES –281500Z (JUN) – UFN

The NPS/FS will be conducting concentrated activities within a 5 mile radius of N36° 13' 38" and W118° 18' 29". Altitude is at or below 1,000 AGL.

**** INDICATES CHANGES****

For more detailed information concerning any of the above information, contact the R-2508 Central Coordinating Facility at DSN: 527-2508, COMM: (661) 277-2508.

R-2508 COMPLEX DAILY BRIEF SHEET

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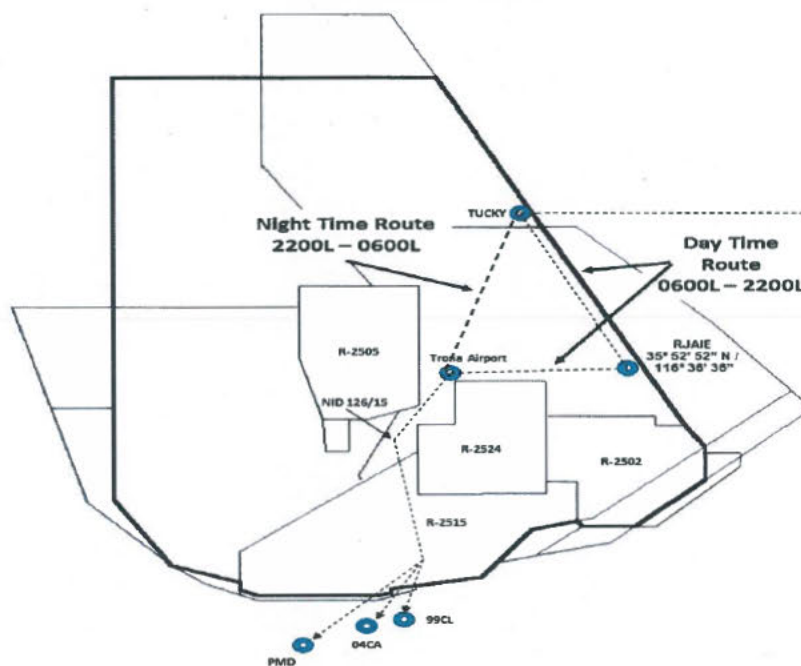
UAS OPERATIONS



01/01/2019 – 01/01/2020, DAILY SUNRISE TO SUNSET

UAS OPERATING AREA DEFINED AS 2 NM RADIUS OF 35 58.07N 118 31.86W SFC – 200 FEET
AGL.

UAV OPERATIONS



INS TO CHADS	ALTITUDE	CHADS TO INS	ALTITUDE	CALL SIGN
311530Z – 311730Z	FL200	312230Z – 010030Z	FL190	VADER 11
311600Z – 311800Z	FL200	312300Z – 010100Z	FL190	VADER 12

**** INDICATES CHANGES****

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NON-DOD JET AIRCRAFT ACTIVITIES

311500Z – 311630Z

THERE WILL BE A NON-DOD JET (L-39 ALBATROS VHF ONLY) FLYING THE
SIDEWINDER /JEDI TRANSITION

FUTURE OPERATIONS

AMATEUR ROCKET LAUNCHES

Multiple unmanned rocket launches, Saturday, August 3. Launch operations are from 8:00 am to Sunset PDT (1500Z to sunset) to a maximum altitude of 50,000-feet AGL. These launches are within an area defined as 5 NM radius of our property North-East of Koehn Dry Lake, Edwards VOR EDW 336° Radial 23 NM (EDW336023), Latitude 35° 21' 12" North, Longitude 117° 48' 25.80".

UAS OPERATIONS

050330Z – 051130Z, 110345Z – 111230Z

UAS operations within Isabella, Owens, Saline, Panamint FL400 and above, Porterville, Bakersfield, Shoshone North, Shoshone South, at FL430 and above.

AMATEUR ROCKET LAUNCHES

Multiple unmanned rocket launches, Saturday, August 10. Launch operations are from 8:00 am to Sunset PDT (1500Z to sunset) to a maximum altitude of 50,000-feet AGL. These launches are within an area defined as 5 NM radius of our property North-East of Koehn Dry Lake, Edwards VOR EDW 336° Radial 23 NM (EDW336023), Latitude 35° 21' 12" North, Longitude 117° 48' 25.80".

**** INDICATES CHANGES****

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R-2508 COMPLEX DAILY BRIEF SHEET

DOES NOT INCLUDE ACTIVITIES SCHEDULED WITHIN
INTERNAL RESTRICTED AREAS

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USAF SharePoint: <https://USAF.DPS.MIL/TEAMS/12162>

CCF After Hours Support: 1-866-805-2851

31 JULY 19

CHANGE 1 – SWLL RESTRICTION

GPS TESTING EVENTS

FAA Public Notice Website: http://www.faa.gov/SPANS/notices_public.aspx

14 July – 02 August 2019, Nellis AFB, NV

15 July – 20 August 2019, Yuma, AZ

SCHEDULED REFUELING OPERATIONS

<u>DATE/TIME (Z)</u>	<u>AREA</u>	<u>ALTITUDES</u>	<u>UNIT BASE</u>
311730Z – 312200Z	ARISB	FL240 – FL260	EDW

SPECIAL ACTIVITIES/OPERATIONS

SWLL RESTRICTION

THE SIDEWINDER LOW LEVEL ROUTE JEDI TRANSITION IS CLOSED POINT "C" TO POINT "J". REMAIN CLEAR OF POINT "J" FOR HELO OPERATIONS.

NATIONAL PARKS/FORESTRY SERVICE ACTIVITIES

CA-INF-1506 - CONCENTRATED ACTIVITIES - 301900Z – UFN

The NPS/FS will be conducting concentrated activities within a 5 mile radius of N36° 11' 58" and W118° 16' 47". Altitude is at or below 3000 AGL.

NATIONAL PARKS/FORESTRY SERVICE ACTIVITIES

CA-INF-1435 CONCENTRATED ACTIVITIES - 261500Z – UFN

The NPS/FS will be conducting concentrated activities within a 7 NM radius of N36° 17' 06" and W118° 13' 45". Altitude is at or below 4,000 feet AGL.

**** INDICATES CHANGES ****

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R-2508 COMPLEX DAILY BRIEF SHEET

**DOES NOT INCLUDE ACTIVITIES SCHEDULED WITHIN
INTERNAL RESTRICTED AREAS**

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CCF After Hours Support: 1-866-805-2851

NON-DOD JET AIRCRAFT ACTIVITIES

311500Z – 311630Z

THERE WILL BE A NON-DOD JET (L-39 ALBATROS VHF ONLY) FLYING THE
SIDEWINDER /JEDI TRANSITION

FUTURE OPERATIONS

AMATEUR ROCKET LAUNCHES

Multiple unmanned rocket launches, Saturday, August 3. Launch operations are from 8:00 am to Sunset PDT (1500Z to sunset) to a maximum altitude of 50,000-feet AGL. These launches are within an area defined as 5 NM radius of our property North-East of Koehn Dry Lake, Edwards VOR EDW 336° Radial 23 NM (EDW336023), Latitude 35° 21' 12" North, Longitude 117° 48' 25.80".

UAS OPERATIONS

050330Z – 051130Z, 110345Z – 111230Z

UAS operations within Isabella, Owens, Saline, Panamint FL400 and above, Porterville, Bakersfield, Shoshone North, Shoshone South, at FL430 and above.

AMATEUR ROCKET LAUNCHES

Multiple unmanned rocket launches, Saturday, August 10. Launch operations are from 8:00 am to Sunset PDT (1500Z to sunset) to a maximum altitude of 50,000-feet AGL. These launches are within an area defined as 5 NM radius of our property North-East of Koehn Dry Lake, Edwards VOR EDW 336° Radial 23 NM (EDW336023), Latitude 35° 21' 12" North, Longitude 117° 48' 25.80".

**** INDICATES CHANGES****

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R-2508 COMPLEX DAILY BRIEF SHEET

DOES NOT INCLUDE ACTIVITIES SCHEDULED WITHIN
INTERNAL RESTRICTED AREAS

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USAF SharePoint: <https://USAF.DPS.MIL/TEAMS/12162>

CCF After Hours Support: 1-866-805-2851

31 JULY 19

CHANGE 2

NPS/FS CONCENTRATED ACTIVITY ADDED

GPS TESTING EVENTS

FAA Public Notice Website: http://www.faa.gov/SPANS/notices_public.aspx

14 July – 02 August 2019, Nellis AFB, NV

15 July – 20 August 2019, Yuma, AZ

SCHEDULED REFUELING OPERATIONS

<u>DATE/TIME (Z)</u>	<u>AREA</u>	<u>ALTITUDES</u>	<u>UNIT BASE</u>
311730Z – 312200Z	ARISB	FL240 – FL260	EDW

SPECIAL ACTIVITIES/OPERATIONS

SWLL RESTRICTION

THE SIDEWINDER LOW LEVEL ROUTE JEDI TRANSITION IS CLOSED POINT "C" TO POINT "J". REMAIN CLEAR OF POINT "J" FOR HELO OPERATIONS.

NATIONAL PARKS/FORESTRY SERVICE ACTIVITIES

CA-SQF-1611 - CONCENTRATED ACTIVITIES - 312151Z – UFN

The NPS/FS will be conducting concentrated activities within a 5 mile radius of N35° 38' 03" and W118° 25' 03". Altitude is at or below 3000 AGL.

NATIONAL PARKS/FORESTRY SERVICE ACTIVITIES

CA-INF-1506 - CONCENTRATED ACTIVITIES - 301900Z – UFN

The NPS/FS will be conducting concentrated activities within a 5 mile radius of N36° 11' 58" and W118° 16' 47". Altitude is at or below 3000 AGL.

**** INDICATES CHANGES****

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R-2508 COMPLEX DAILY BRIEF SHEET

**DOES NOT INCLUDE ACTIVITIES SCHEDULED WITHIN
INTERNAL RESTRICTED AREAS**

R-2508 Website: <http://www.edwards.af.mil/Home/R-2508>

USAF SharePoint: <https://USAF.DPS.MIL/TEAMS/12162>

CCF After Hours Support: 1-866-805-2851

ATIONAL PARKS/FORESTRY SERVICE ACTIVITIES

CA-INF-1435 CONCENTRATED ACTIVITIES - 261500Z – UFN

The NPS/FS will be conducting concentrated activities within a 7 NM radius of N36° 17' 06" and W118° 13' 45". Altitude is at or below 4,000 feet AGL.

NATIONAL PARKS/FORESTRY SERVICE ACTIVITIES

CA-INF-903 CONCENTRATED ACTIVITIES –281500Z (JUN) – UFN

The NPS/FS will be conducting concentrated activities within a 5 mile radius of N36° 13' 38" and W118° 18' 29". Altitude is at or below 1,000 AGL.

UAS OPERATIONS



01/01/2019 – 01/01/2020, DAILY SUNRISE TO SUNSET

UAS OPERATING AREA DEFINED AS 2 NM RADIUS OF 35 58.07N 118 31.86W SFC – 200 FEET AGL.

NON-DOD JET AIRCRAFT ACTIVITIES

311500Z – 311630Z

THERE WILL BE A NON-DOD JET (L-39 ALBATROS VHF ONLY) FLYING THE
SIDEWINDER /JEDI TRANSITION

**** INDICATES CHANGES****

For more detailed information concerning any of the above information, contact the R-2508 Central Coordinating Facility at DSN: 527-2508, COMM: (661) 277-2508.

**Section TWO: R-2508 RANGES
SIDEWINDER LOW LEVEL (Rev 3)**

CAUTION: These are R-2508 procedural controls for local use only. Points will be flown sequentially (i.e., A, B, C...M or C, J, K...M, etc).

OPPOSITE DIRECTION IS PROHIBITED

The SIDEWINDER and JEDI Transition are not published MTRs

ROUTE DESCRIPTION:

PT	Lat/Long	Pt Description/Elevation
A	N 35 38.75 W118 28.94	Ctr of West Dam/2575
B	N 36 06.60 W118 29.12	Needles Lookout Twr/8107
C	N 36 24.74 W118 00.57	Washed Out Bridge/3615
D	N 36 35.61 W117 58.53	Wash/Road Int/3635
E	N 37 02.88 W118 12.79	SE Tinemaha Dam/3894
F	N 37 09.18 W117 46.19	Center of Wash/2956
G	N 37 02.17 W117 37.09	Center of Knoll/4738
H	N 36 47.95 W117 45.69	West Tip Lava Flow/1352
I	N 36 30.84 W117 34.05	Road Int/6109
J	N 36 20.69 W117 21.08	Road/Wash Int/2093
K	N 35 39.34 W117 21.62	Road Y/1624
L	N 35 36.61 W117 31.56	Road Int/2480
M	N 35 25.40 W117 40.32	Road/RR Int/2785

ALTITUDE: NLT 200' AGL to 3000' AGL (points A to B); NLT 200' AGL (points B to K); NLT 500' AGL (points K to M). Climb as required to avoid noise sensitive areas and airports (note 8).

ROUTE WIDTH – 2 NM either side of centerline unless otherwise noted below.

Special Operating Procedures:

- (1) Entry Procedure: Prior to entry notify Joshua of intentions and planned Entry/Exit point. Above 3000' AGL and prior to route entry make intentions call on Low Level Common (315.9). Give way to any traffic already established on the route prior to entry.
- (2) A to B remain above 3000' AGL until 3 NM North of Kern Valley Airport to avoid Lake Isabella and surrounding communities.
- (3) Alternate Entry: This is a procedural control and traffic may enter at any point. Preferred alternate entry points are C and E.
- (4) Alternate Exit: This is a procedural control and traffic may exit at any point. Preferred alternate exit points are H and K.

CSFWP-OPS

2-15

APRIL 2019

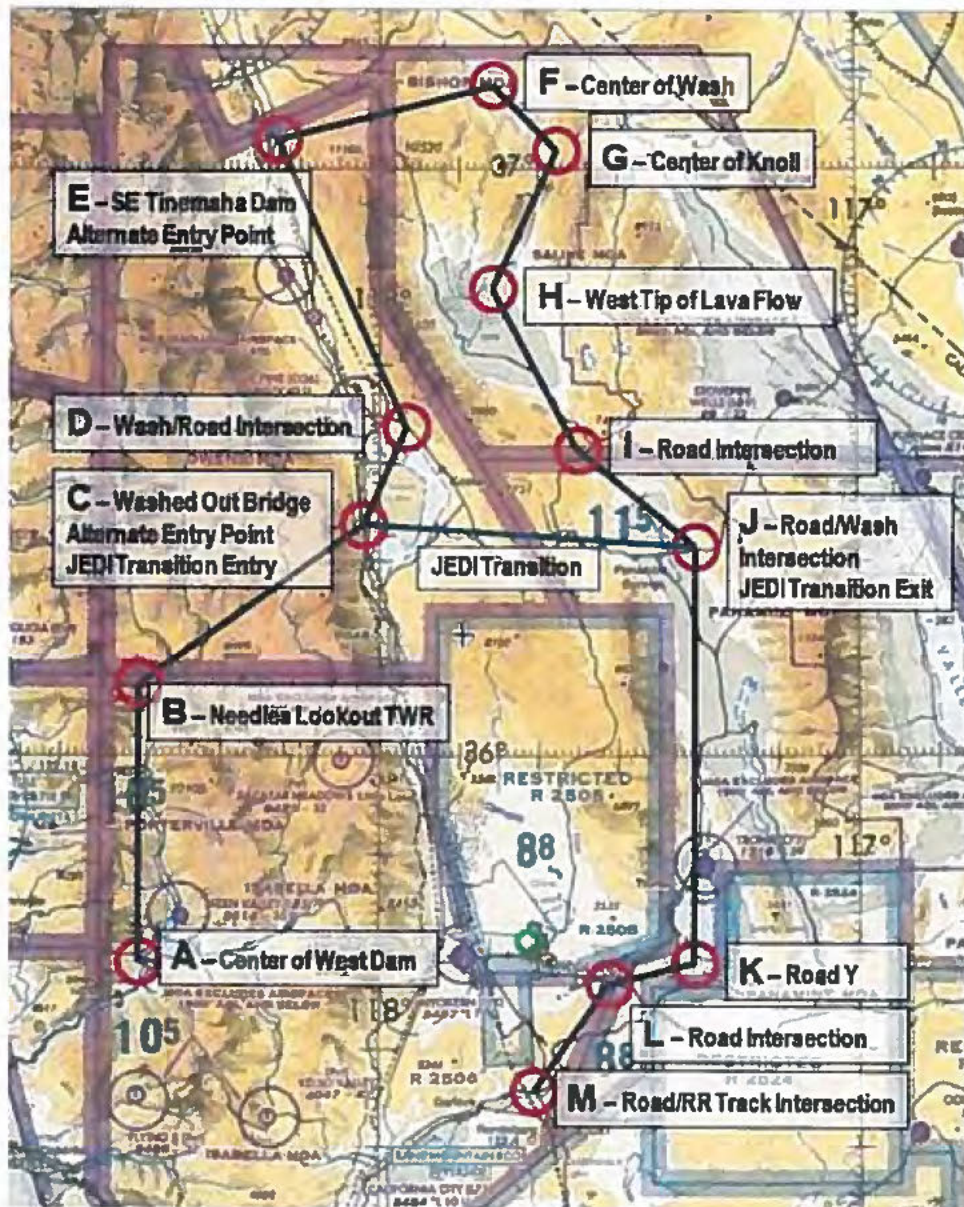
Section TWO: R-2508 RANGES

- (5) All aircraft operating on the Sidewinder/Jedi Transition will utilize the R-2508 low altitude common frequency 315.9. When entering low level environment transmit in the blind call sign, number and type of aircraft, and intentions. Monitor 315.9 until exiting low altitude regime. Repeat calls entering new areas, or crossing ridge lines.
- (6) Slower aircraft (i.e., C-12, T-34) may be on the route at the same time. Use caution for airspeed variations that may exist between aircraft. Aircraft being overtaken has the right of way.
- (7) To mitigate the risk of opposite direction traffic, offset right of centerline when transiting saddles between valleys. Rising terrain may mask advisory calls.
- (8) Avoid all noise sensitive areas by 3000' AGL or 3000' laterally. Avoid all airports along route by 1500' AGL or 3 NM.
- (9) Point B to C, avoid the extremely noise sensitive areas of Olancho and Cartago.
- (10) Point C to D, avoid the extremely noise sensitive areas of Keeler and Lone Pine. Caution: intensive hang glider activity in the vicinity of Dolomite and northeast shore of Owens lake.
- (11) Caution: high migratory bird activity between F and H during daylight hours.
- (12) Arrival/departure of general aviation aircraft at N36°48'42" W117°46'00", northwest of point H. Arriving traffic crosses H between 200-500 AGL against the route, departing traffic crosses H 200-500 AGL with the route.
- (13) **CAUTION:** Possible merging traffic from aircraft on Jedi Transition (approaching from west via Point C). Sidewinder users offset east of Point J for deconfliction. Sidewinder users make mandatory radio call approaching Point J "Call sign, Sidewinder, approaching Point Juliet". Make calls on 315.9
- (14) Point J to K. 198' multi unlit towers N35°53.797' W117°17.558'. Avoid Trona Airport by 1500' AGL or 3 NM.
- (15) Point K to M. Watch for traffic northbound to China Lake initial at 4000' MSL.
- (16) Point L to M, route transits underneath instrument procedure at NID (arc and final approach). Use caution if exiting route prior to point M.
- (17) Conflicts: A to L: IR-236; B to D: VR-1255; E to I: VR-1205-1255-1262; I to L: VR-1262, IR-200; K to M: IR-200-211.

JEDI TRANSITION: At Point C proceed east to Point J. **CAUTION:** Possible merging Sidewinder traffic from the north via Point I. Jedi users offset west of Point J for deconfliction. Jedi users make mandatory radio call approaching Point J "Call sign, Jedi Transition, approaching Point Juliet". Make calls on 315.9.

Section TWO: R-2508 RANGES

SIDEWINDER LOW LEVEL



CSFWP-OPS

2-17

APRIL 2019

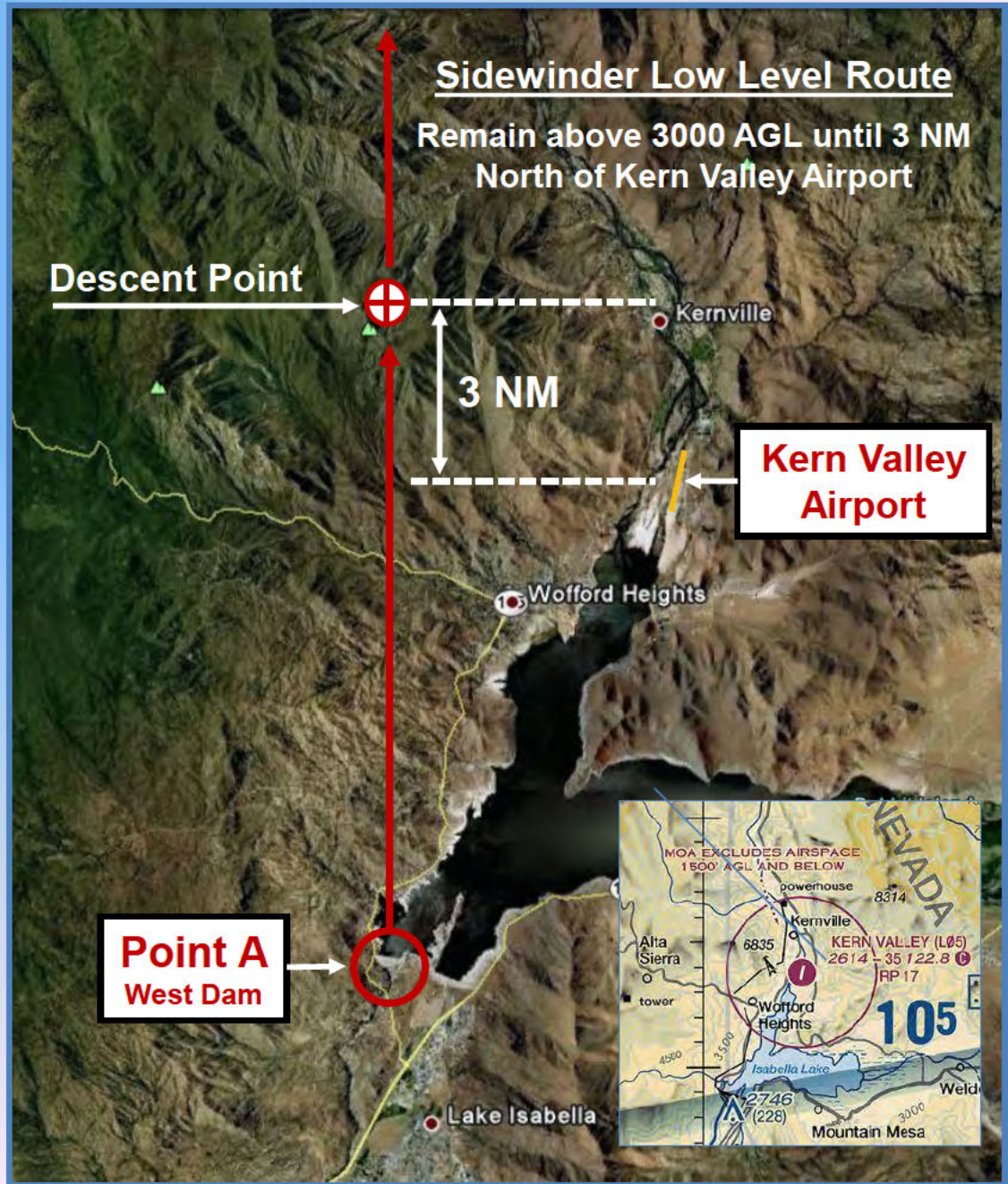


R-2508 Annual Users Briefing

Noise & Low Level Complaints

Sidewinder Low Level Point Alpha to Descent Point

Remain above 3000 AGL
until 3 NM North of Kern
Valley Airport to avoid
Lake Isabella and
surrounding Communities





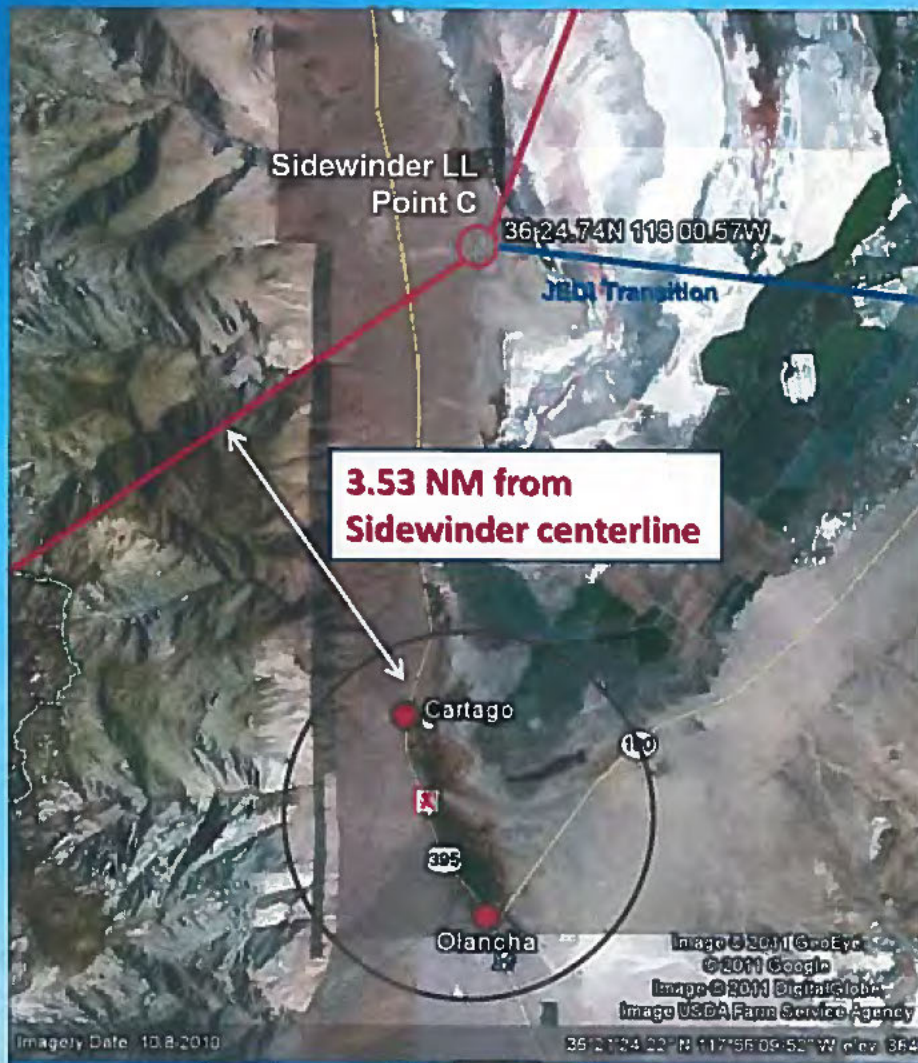
R-2508 Annual Users Briefing

Noise & Low Level Complaints

Areas of Highest Concern:

- Cartago
- Olancha

Source of most Owens Lake area
noise complaints 3.53 NM from
Sidewinder LL centerline





R-2508 Annual Users Briefing

Noise & Low Level Complaints

Other Owens Valley areas
of Concern...

- Lone Pine
- Keeler



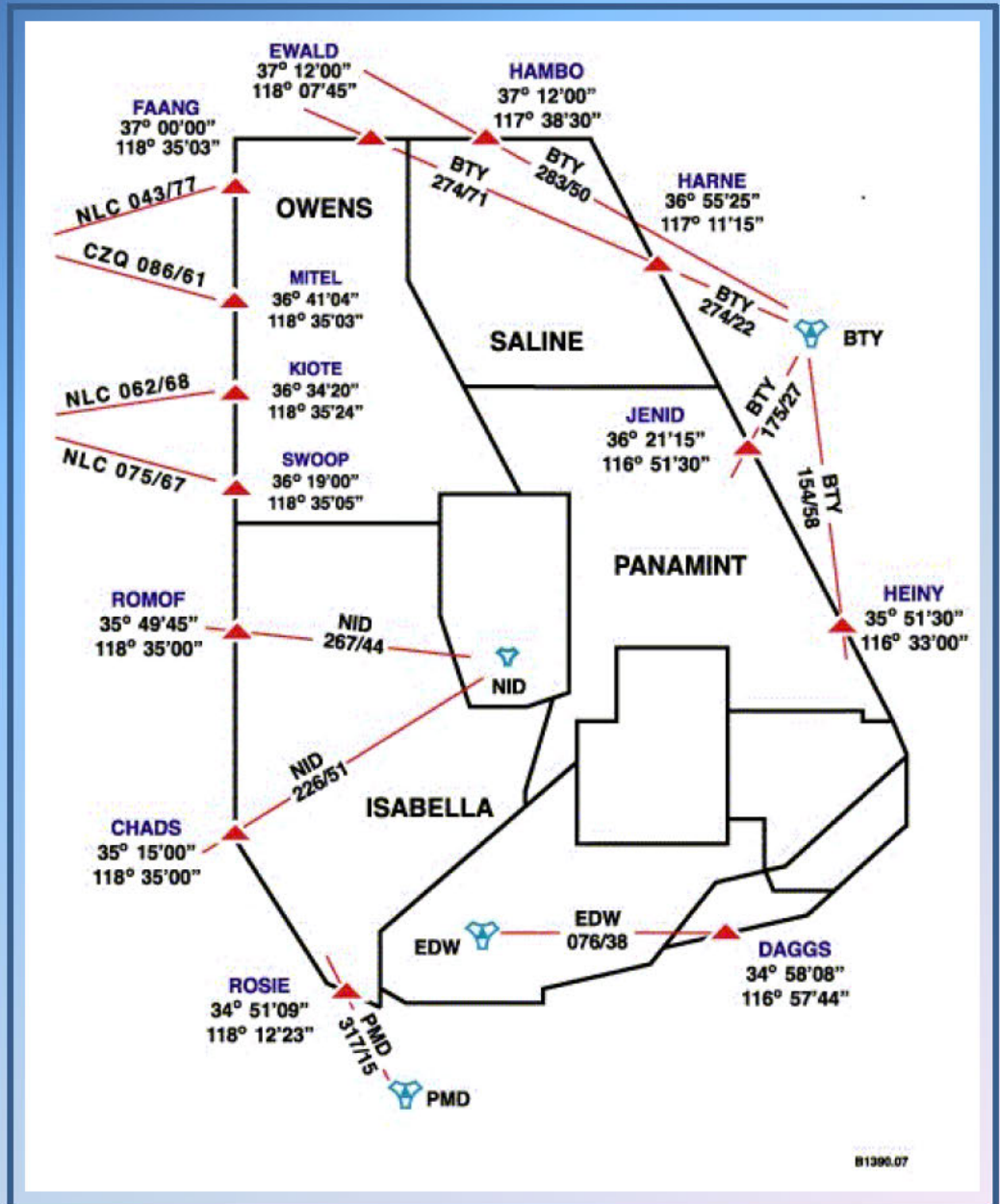


R-2508 Annual Users Briefing

Entry/Exit Points Flight Plan Entries...

- Use Complex entry/exit points during flight planning to alert Joshua/Center of your intentions.
- FAANG/MITEL/KIOTE/SWOOP ROSIE/DAGGS can be filed by name (others by coords or RAD/DME)

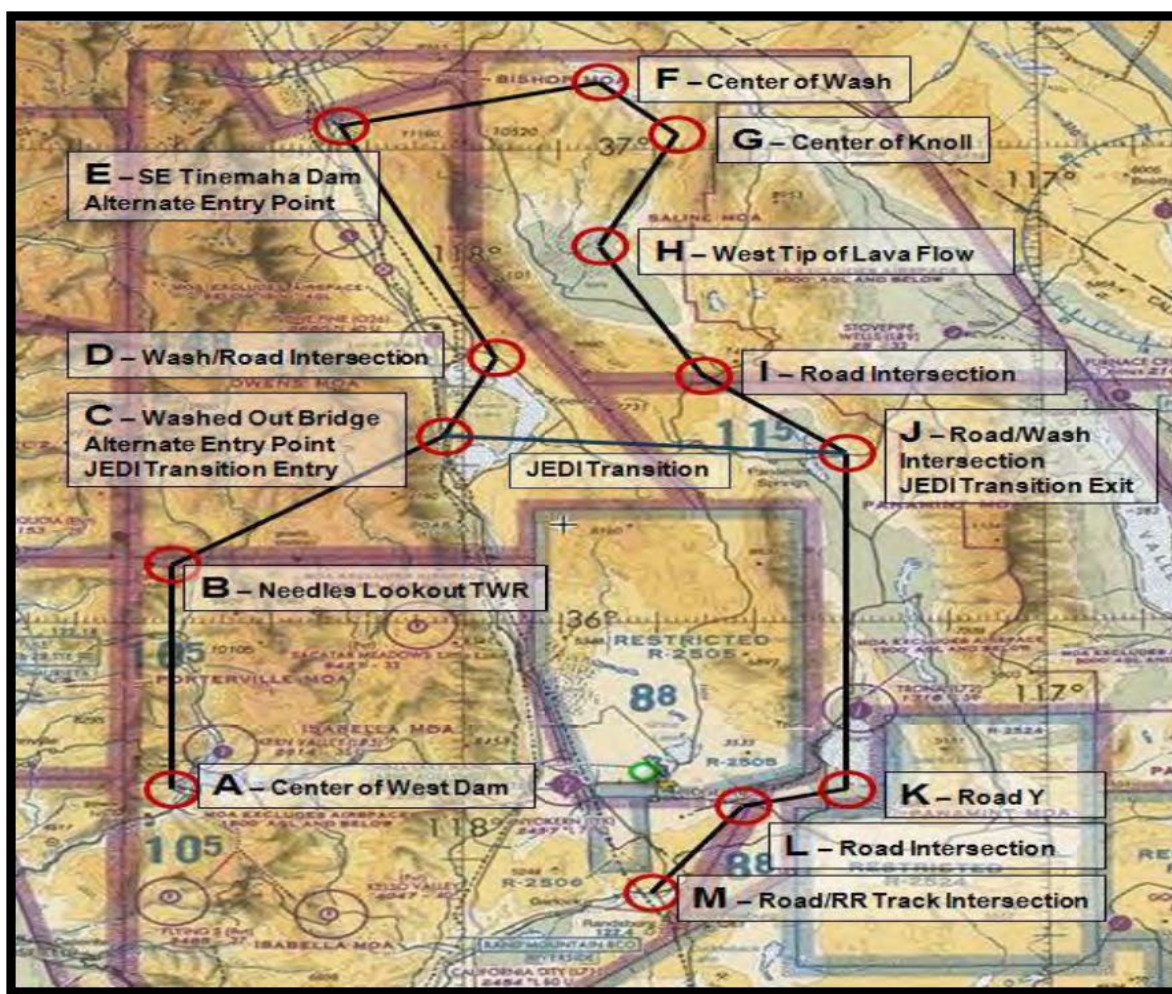
*NID TACAN is unmonitored when China Lake airfield is closed.



CHARLIE AIRFIELD	N 35 35 00.00 / N 35 35.000	W 117 02 52.83 / W 117 02.880
SUPERIOR VALLEY	N 35 17 21.08 / N 35 17.350	W 117 06 15.10 / W 117 06.250
VENTURA	N 35 16 00.00 / N 35 16.000	W 117 01 00.00 / W 117 01.000

5.2.2. SIDEWINDER LOW LEVEL (see Figures 5-2 & 5-3): The Sidewinder Low Level Route (Rev 2) with JEDI Transition was developed to standardize low level training for DoD operations within the R-2508 Complex and is for local use only. This route is not a published military training route (MTR).

- All points will be flown sequentially, i.e. A, B, C...M or C, J, K...M, etc.
- Opposite direction flight is prohibited.
- Aircrews must comply with R-2508 Complex noise sensitive area requirements LAW paragraph 2.4 of this handbook.
- Aircrews entering the Sidewinder LL via Point A must avoid Lake Isabella and surrounding communities.



5-2 Figure: Sidewinder Low Level Route

SIDEWINDER LOW LEVEL (Rev 2)

11 Feb 2015

CAUTION: These are R-2508 procedural controls for local use only. Points will be flown sequentially (i.e. A, B, C...M or C, J, K...M, etc). **OPPOSITE DIRECTION IS PROHIBITED.**

The SIDEWINDER and JEDI Transition are not published MTRs.

ROUTE DESCRIPTION:

PT	Lat/Long	Pt Description/Elevation
A	N 35 38.75 W118 28.94	Ctr of West Dam/2575
B	N 36 06.60 W118 29.12	Needles Lookout Twr/8107
C	N 36 24.74 W118 00.57	Washed Out Bridge/3615
D	N 36 35.61 W117 58.53	Wash/Road Int/3635
E	N 37 02.88 W118 12.79	SE Tinemaha Dam/3894
F	N 37 09.18 W117 46.19	Center of Wash/2956
G	N 37 02.17 W117 37.09	Center of Knoll/4738
H	N 36 47.95 W117 45.69	West Tip Lava Flow/1352
I	N 36 30.84 W117 34.05	Road Int/6109
J	N 36 20.69 W117 21.08	Road/Wash Int/2093
K	N 35 39.34 W117 21.62	Road Y/1624
L	N 35 36.61 W117 31.56	Road Int/2480
M	N 35 25.40 W117 40.32	Road/RR Int/2785

ALTITUDE: ALTITUDE: NLT 200' AGL to 3000' AGL (points A to B); NLT 200' AGL (points B to K); NLT 500' AGL (points K to M). Climb as required to avoid noise sensitive areas and airports (note 8).

ROUTE WIDTH – 2 NM either side of centerline.

Special Operating Procedures:

- (1) Entry Procedure: Prior to entry notify Joshua of intentions and planned Entry/Exit point. Above 3000 AGL and prior to route entry make intentions call on Low Level Common (315.9). Give way to any traffic already established on the route prior to entry.
- (2) A to B remain above 3000 AGL until 3 NM North of Kern Valley Airport to avoid Lake Isabella and surrounding communities.

- (3) Alternate Entry: This is a procedural control and traffic may enter at any point. Preferred alternate entry points are C and E.
- (4) Alternate Exit: This is a procedural control and traffic may exit at any point. Preferred alternate exit points are H and K.
- (5) All aircraft operating on the Sidewinder/Jedi Transition will utilize the R-2508 low altitude common frequency 315.9. When entering low level environment transmit in the blind call sign, number and type of aircraft, and intentions. Monitor 315.9 until exiting low altitude regime. Repeat calls entering new areas, or crossing ridge lines.
- (6) Slower aircraft (i.e. C-12, T-34) may be on the route at the same time. Use caution for airspeed variations that may exist between aircraft. Aircraft being overtaken has the right of way.
- (7) To mitigate the risk of opposite direction traffic, offset right of centerline when transiting saddles between valleys. Rising terrain may mask advisory calls.
- (8) Avoid all noise sensitive areas by 3000' AGL or 3000' laterally. Avoid all airports along route by 1500' AGL or 3 NM.
- (9) Point B to C, avoid the extremely noise sensitive areas of Olancha and Cartago.
- (10) Point C to D, avoid the extremely noise sensitive areas of Keeler and Lone Pine. Caution: intensive hang glider activity in the vicinity of Dolomite and northeast shore of Owens lake.
- (11) Caution: high migratory bird activity between F and H during daylight hours.
- (12) **CAUTION:** Possible merging traffic from aircraft on Jedi Transition (approaching from west via Point C). Sidewinder users offset east of Point J for deconfliction. Sidewinder users make mandatory radio call approaching Point J "Call sign, Sidewinder, approaching Point Juliet". Make calls on 315.9
- (13) Point J to K. 198' multi unlit towers N35°53.797 W117°17.558. Avoid Trona Airport by 1500' AGL or 3 NM.
- (14) Point K to M. Watch for traffic northbound to China Lake initial at 4000' MSL.
- (15) Point L to M, route transits underneath instrument procedure at NID (arc and final approach). Use caution if exiting route prior to point M.
- (16) Conflicts: A to L: IR-236; B to D: VR-1255; E to I: VR-1205-1255-1262; I to L: VR-1262, IR-200; K to M: IR-200-211.

JEDI TRANSITION: At Point C proceed east to Point J. **CAUTION:** Possible merging Sidewinder traffic from the north via Point I. Jedi users offset west of Point J for deconfliction. Jedi users make mandatory radio call approaching Point J "Call sign, Jedi Transition, approaching Point Juliet". Make calls on 315.9.

Figure 5-3: Sidewinder Low Level Special Operating Procedures

120. Low Altitude Training (LAT)/Low Altitude Tactical Training (LATT)

a. Definitions:

(1) LAT: Any portion of any training event, excluding takeoff and landing, conducted below 1,500' AGL on approved low level routes, within Military Operating Areas (MOA), restricted areas or over water. LAT sorties flown with NVGs should brief and comply with both the LAT and NVG Training Rules.

(2) LATT: Initial FRS or refresher training involving the execution of vertical and oblique jinks and low altitude threat reaction maneuvers (SOJ, ROJ, TOJ, guns jink, etc.).

b. LATT sorties shall only be conducted on an approved LATT course, adhering strictly to prebriefed maneuvers and dive recovery rules.

121. Target Area Training Procedures

a. When the target to be used is unmanned, the drop area shall be visually cleared prior to any ordnance deliveries. The designated flight lead shall normally act as the Range Safety Officer. These roles can be executed or assisted by an adversary element with proper direction from the flight lead.

b. Master Arm shall be placed to the "ARM" position in all delivery modes only when properly established within the confines of the target area and in the run with interval and any friendly forces clear of the delivery. For all delivery modes, an "off, safe" call shall be made after each run on target frequency to confirm that the aircrew has placed the Master Arm to the safe position. The exception is that the "off, safe" call need not be made in a Close Air Support (CAS) environment.

c. After each member calls "off, safe" on the final run during pattern bomb training, the aircrew shall report status of weapons (i.e., "Winchester", "One hung", etc.) and the number of aircraft in sight.

d. Chaff and decoy flares shall be expended only in authorized areas.

e. Minimum altitude for strafe patterns.

Low Altitude Training (LAT)/(LATT) Rules
Briefing Items

CFIT Avoidance

1. Use local altimeter setting.
2. Training Floor _____
3. Area Min Safe Altitude _____
4. LAWS Settings _____
5. Maintain airspeed at or above corner airspeed.
6. Mission Crosscheck Time

Altitude	Straight & Level	Level Turn
200' AGL	3 seconds	2 seconds
500' AGL	5 seconds	3 seconds
7. Dive Recovery Rules

Dive Angle	Start Recovery	Dive Angle	Start Recovery
-25 degrees	1600' AGL	-20 degrees	1200' AGL
-15 degrees	800' AGL	-10 degrees	500' AGL
-5 degrees	300' AGL	-5 degrees	300' AGL
8. Below 500'AGL, descending turns not authorized.
9. The 50 percent rule and 10 degree rule will be in effect.
10. Utilize a Maximum Recovery Maneuver (MRM) or Emergency Dive Recovery as required.

Midair/Collision Avoidance

11. Sufficient Mission Crosscheck Time (MCT) and altitude deconfliction will be used by all flight members to ensure safe separation during all phases of flight.
12. For section turns, the dynamic aircraft or first to turn has collision avoidance responsibility.

Day Low Altitude Training (LAT)
Planning Requirements/Standard Operating Procedure

1. Currency:

a. Pilots who have not flown in a LAT environment for at least 10 minutes in the last 30 days shall be restricted to 500' AGL.

2. Weather:

- a. Minimum of 3,000' ceiling in the operating area with five miles visibility.
- b. No maneuvers through clouds or cloud layers unless under positive IFR control.
- c. Daylight outside of 30 minutes after sunrise or before sunset.

3. Aircraft entering inadvertent IMC shall immediately execute a MRM. Aircraft above the route/operating area structure and still IMC shall squawk Emergency (7700) until in contact with Air Route Traffic Control Center (ARTCC).

4. MRM: Select Max AB and initiate a 4G pull up to 47-50 degrees nose up. Unload the aircraft to 45 degrees nose up on the velocity vector. At 250 KCAS execute a 0.5G pushover to straight and level flight and select military power as the velocity vector reaches the horizon.

5. Emergency Dive Recovery: Roll wings level (unloaded to less than 90 degrees, then loaded roll) pulling with maximum G available until positive rate of climb and terrain/obstacle clearance is assured. If airspeed is greater than 350 KCAS, throttles to idle. If airspeed is less than 350 KCAS, throttle to MIL/MAX.

6. Minimum altitude shall be 200' AGL or per the FRS syllabus.

7. The assigned Training Floor is the minimum altitude of any aircraft during the tactical portion of the flight.

8. If RADALT warning is triggered, the aircrew shall take immediate proactive steps to maintain the aircraft within briefed limits.

9. Aural warning caution functionality and radar altimeter "R" in the HUD shall be verified prior to initial descent below 1,500' AGL. Flights in the LAT environment require an operational HUD, RADALT, INS and GPWS.

10. Before commencing LAT, a G awareness maneuver shall be performed at greater than 10,000' AGL and shall consist of a total of at least 180 degrees of turn. The first 90 degrees of

turn shall be at four G's. The second 90 degrees of turn shall be six G's or a spike to maximum G available followed by an ease to four G's for the remainder of the turn.

11. The LAT mission shall be thoroughly briefed to include route/operating area restrictions, obstacles, potential hazards and an assessment of possible environmental factors (smoke, haze, sun angle, etc). All specific maneuvers and rules shall also be briefed.

12. Primary responsibility during dynamic maneuvering is midair and CFIT avoidance.

13. Low Altitude Checklist will be complete prior to descending below 1,500' AGL.

- a. Oxygen mask securely fastened.
- b. Visor down.
- c. Good "R" in the HUD and good RADALT warning tone.
- d. HUD operational (HUD repeater displayed in aft cockpit for two seat aircraft).
- e. G-warm complete.

14. 50 percent rule: The maximum safe dive angle for a 90 degree turning roll in is 50 percent of the pre-roll in altitude (AGL) in hundreds of feet, not to exceed 25 degrees.

15. 10 degree rule: Start your roll out at or before a dive angle equal to your highest observed climb angle minus 10 degrees. The G used over the top must be greater than or equal to the G used at the start of the maneuver.

16. All planned tactical turns shall be briefed as well as any mission specific profile details relative to terrain, simulated threat, etc.

17. While mutual support and de-confliction are the responsibility of all flight members, wingmen are primarily responsible for deconfliction, collision avoidance, and formation keeping.

18. Should any aircrew observe an unsafe or potentially dangerous situation developing, that aircrew shall announce it by transmitting, "Knock it off"/"terminate," and shall maneuver appropriately to deconflict/climb away from terrain. Additionally, LAT shall cease when:

- a. Any training rule is violated.
- b. "KIO"/"Terminate" is called by any aircrew.

- c. Any dangerous situation develops or there is a loss of situational awareness.
 - d. Any aircraft NORDO. NORDO aircraft shall rock wings and climb above 1,500' AGL.
 - e. Bingo fuel state is reached.
 - f. Training objectives have been attained.
 - g. An unbriefed aircraft enters the mission area and is detrimental to safety of flight.
 - h. Any aircraft enters the clouds/inadvertent IMC or weather deteriorates below minimums.
 - i. Any aircrew experiences or suspects A-LOC or G-LOC.
 - j. Crossing the border of the authorized training area.
 - k. Overstress or malfunction with aircraft.
 - l. All aircraft lose sight
 - m. Any aircraft descends below briefed minimum altitude.
 - n. Any aircraft descends in a turn that was briefed to be level.
19. When equipped with JHMCS:
- a. Aircrew will "blank for safety" if the JHMCS symbology or display fixation begins to compromise situational awareness.
 - b. High off-boresight target designations below 1,000' AGL should be avoided.

ADDITIONAL LOW ALTITUDE TACTICAL TRAINING (LATT) SPECIFICS

- 1. LATT must be performed during daylight more than two hours after sunrise or before sunset.
- 2. Aircrew shall have flown within the last 7 days. Aircrew shall also have flown in the LAT environment or conducted a SLAT within 14 days.
- 3. Brief 50 percent rule, 10 degree rule, MRM, and Emergency Dive Recovery from memory.
- 4. LATT sorties shall only be flown on approved LATT courses.

CSFWPINST 3710.9I
CSFWLINST 3710.14H
N3
05 DEC 17

5. LATT requires specific initial FRS and refresher training involving the execution of vertical and oblique jinks and low altitude threat reaction maneuvers (SOJ, ROJ, TOJ, guns jink, etc.).
6. Minimum altitude shall be 200' AGL. Unless executing the FRS syllabus, a minimum of two aircraft are required to conduct LATT.
7. Vertical jinks of less than 10 degrees are prohibited.
8. Tuck under recoveries are prohibited.
9. Minimum airspeed shall be 400 KCAS. Maximum airspeed shall be 525 KCAS.
10. All "Pull up," "Recover," "Abort," or "Knock it off" calls shall be honored immediately. On hearing any of these calls, pilots shall execute a wings level Emergency Dive Recovery.

Mar 2019 Walker, Charles

DAY	AIRCRAFT		KIND OF FLIGHT CODE*	PILOT TIME			SPECIAL CREW TIME
	FRAME	SERIAL NUMBER		TOTAL PILOT TIME	FIRST PILOT	CO-PILOT	
2	FA-18E	168471	1A6 1A7	2.1	2.1		2.1
4	FA-18E	168480	1A6	1.5	1.5		1.5
7	FA-18E	168473	1A6	1.1	1.1		1.1
8	FA-18E	168475	1A6	1.7	1.7		1.7
9	FA-18E	168477	1A6	1.4	1.4		1.4
10	FA-18E	168471	2K4	2.1	2.1		2.1
14	FA-18E	168475	1A6	1.6	1.6		1.6
15	FA-18E	168475	1A6	1.6	1.6		1.6
16	FA-18E	168475	2K4	1.6	1.6		1.6
18	FA-18E	168479	2K4	1.5	1.5		1.5
18	FA-18E	168479	1A6	1.7	1.7		1.7
19	FA-18E	168478	1A7	1.5	1.5		1.5
20	FA-18E	168479	2K4	1.5	1.5		1.5
20	FA-18E	168479	1A7	1.6	1.6		1.6
23	FA-18E	168479	1A6	1.8	1.8		1.8
TOTAL THIS PAGE				24.3	24.3		24.3
BROUGHT FORWARD		1932.0		163.4	163.4		163.4
TOTAL TO DATE		1956.3		187.7	187.7		187.7
*See page 2 for codes		TOTAL ACCUM. PILOT TIME	TOTALS, THIS FISCAL YEAR				

Page - 1

INSTRUMENT FLIGHT		NIGHT TIME	LANDINGS					CATAPULT	STD INST APPR. COMPLETED			REMARKS
ACT	SIM		CARRIER			FCLP	SEA/ LAND		NO.	TYP	S	
			ARR	T&G	BOL							
2.1		2.1	0/1		0/1		2/0	1	3	1	(Force Con) [Mov R R]	
			1/0				1/0	1			2.11F w/ DJSCz [R]	
			1/0				1/0	1			3.11F w/ GASH [R]	
1.0		1.7	0/1				1/0	1	2	1	3.11F w/ GASH [R]	
			1/0				1/0	1			3.14F w/ GASH [R]	
			1/0				1/0	1			RED for 4+4 [R]	
1.6		1.6	0/1				1/0	1	1	1	Sunset TACINT [R]	
			1/0				1/0	1			3.11F w/ GASH [R]	
1.6		1.6	0/1				1/0	1	1	1	RED LD [R]	
0.3			1/0				1/0	1	1	2	RED [R]	
0.7		0.7	0/1				1/0	1	1	1	TACINT [R]	
1.0		1.0	0/1				1/0	1	1	1	BMB MASIRAH [R]	
0.5			1/0				1/0	1	1	1	RED [R]	
1.6		1.6	0/1				1/0	1	1	1	Nx Stuff [R]	
			1/0				1/0	1			PT D w/ GASH [R]	
10.4		10.3	8/7		0/1		16/0	15	CERTIFIED A CORRECT RECORD:			
48.7	0.8	63.9	36/34	3/0	1/1	7/7	75/8	68	Pilot			
59.1	0.8	74.2	44/41	3/0	1/2	7/7	91/8	83	Approved:			
TOTALS, THIS FISCAL YEAR									C.O. or authorized deputy			

Pilot-time report submitted through last (or,) day of this month, noted by (initials.)

Apr 2019 Walker, Charles

DAY	AIRCRAFT		KIND OF FLIGHT CODE*	PILOT TIME				SPECIAL CREW TIME
	FRAME	SERIAL NUMBER		TOTAL PILOT TIME	FIRST PILOT	CO-PILOT	A/C COMDR.	
8	FA-18E	168475	1A6 1A7	1.8	1.8		1.8	
8	FA-18E	168475	1A9	1.8	1.8		1.8	
10	FA-18E	166828	1A7	1.5	1.5		1.5	
14	FA-18E	168471	1A7	1.6	1.6		1.6	
15	FA-18E	168479	1A7	1.5	1.5		1.5	
17	FA-18E	168480	2K4	1.5	1.5		1.5	
17	FA-18E	168476	1A7	1.7	1.7		1.7	
18	FA-18E	166828	2K4	1.3	1.3		1.3	
22	FA-18E	168476	1A7	1.5	1.5		1.5	
22	FA-18E	168476	1A6	1.9	1.9		1.9	
23	FA-18E	168479	2K4	1.6	1.6		1.6	
23	FA-18E	168471	1A6	1.5	1.5		1.5	
24	FA-18E	168480	2K4	1.6	1.6		1.6	
TOTAL THIS PAGE			20.8	20.8	20.8		20.8	
BROUGHT FORWARD		1956.3		187.7	187.7		187.7	
TOTAL TO DATE		1977.1		208.5	208.5		208.5	
*See page 2 for codes		TOTAL ACCUM. PILOT TIME	TOTALS, THIS FISCAL YEAR					

Page - 1

Page - 1

INSTRUMENT FLIGHT		NIGHT TIME	LANDINGS					CATAPULT	STD INST APPR. COM- PLETED			REMARKS
ACT	SIM		CARRIER			FCIP	SEA/ LAND		NO.	TYP	S	
			ARR	T&G	BOL							
			1/0	1/0			2/0	1				1v0, TGT (Rx2)
0.8		1.0	0/1				1/0	1	1	1		SSC & Nx Trap (R)
			1/0				1/0	1				3.18F w/ GASH (R Fair)
0.6		1.6	0/1				1/0	1	1	1		2+2 (Force Con) (R Mnv)
			1/0				1/0	1				3.5F on Wake w/ (R) (R)
0.5			1/0				1/0	1	1	1		Red for GASH (R)
1.7		1.7	0/1				1/0	1	1	1		Nx Stuff (R)
			1/0				1/0	1				Red (R)
0.5			1/0				1/0	1				4.1F w/ Danica (R)
1.9		1.9	0/1				1/0	1	1	1		Night Stuff (R Mnv)
1.2			1/0				1/0	1	1	1		Red (R Mnv)
1.5		1.5	0/1				1/0	1	1	1		More Nx Stuff (R)
1.0			1/0				1/0	1	1	1		RED LD w/ CVN- 72 (R)
9.7		7.7	8/5	1/0			14/0	13	CERTIFIED A CORRECT RECORD:			Pilot
59.1	0.8	74.2	44/41	3/0	1/2	7/7	91/8	83				
68.8	0.8	81.9	52/46	4/0	1/2	7/7	105/8	96	Approved:			
TOTALS, THIS FISCAL YEAR									C.O. or authorized deputy			

DAY	AIRCRAFT		KIND OF FLIGHT CODE*	PILOT TIME			SPECIAL CREW TIME
	FRAME	SERIAL NUMBER		TOTAL PILOT TIME	FIRST PILOT	CO-PILOT	
2	FA-18E	168473	2K4	1.6	1.6		1.6
2	FA-18E	168473	1A6	0.7	0.7		0.7
4	FA-18E	168480	2K4	1.6	1.6		1.6
6	FA-18E	168475	1A6	1.6	1.6		1.6
9	FA-18E	168471	1A6	0.9	0.9		0.9
12	FA-18E	168472	1A6	1.2	1.2		1.2
15	FA-18E	168479	1A4	1.8	1.8		1.8
15	FA-18E	168479	1A1	2.3	2.3		2.3
15	FA-18E	168479	1A1	2.4	2.4		2.4
16	FA-18E	168479	1A1	1.7	1.7		1.7
22	FA-18E	168475	1A6	1.7	1.7		1.7
23	FA-18E	168480	1A6	1.3	1.3		1.3
28	FA-18E	168473	1A6	1.4	1.4		1.4
29	FA-18E	168475	1A7	1.3	1.3		1.3
30	FA-18E	168480	1A1	2.3	2.3		2.3
31	FA-18E	168480	1A7	1.3	1.3		1.3
31	FA-18E	168480	1A7	1.7	1.7		1.7
TOTAL THIS PAGE				26.8	26.8		26.8
ROUGHT FORWARD		1977.1		208.5	208.5		208.5
TOTAL TO DATE		2003.9		235.3	235.3		235.3
*See page 2 for codes		TOTAL ACCUM. PILOT TIME	TOTALS, THIS FISCAL YEAR				

Page 1

INSTRUMENT FLIGHT		NIGHT TIME	LANDINGS					CATAPULT	STD INST APPR. COMPLETED			REMARKS
ACT	SIM		CARRIER			FCLP	SEA/ LAND		NO.	TYP	S	
			ARR	T&G	BOL							
0.5			1/0				1/0	1				Red LD [R]
0.7		0.7	0/1				1/0	1	1	1		Scary Nx Shit [R]
			1/0				1/0	1				Red Ass Recovery [R]
0.5			1/0				1/0	1				Humpty 4.5 [R1]
			1/0				1/0	1				3.11F w/ Jerry [R]
0.2			1/0				1/0	1				Finally, a 4 Ship [R]
0.5							0/1	1				FOF [CV74-KVQQ]
0.5							0/1					KVQQ-KAFW
0.5							0/1					KAFW-KPHX
0.5							0/1					Fly In [KPHX-KNLC]
0.5							0/1					R-2508 Currency
							0/1	1				2v2, R-2508
0.5							0/1					R-2508
							0/1					SIDEWINDER
0.5							0/1		1	2		KNLC-KBFI
0.5							0/1					KBFI-KMWH [VR1350]
0.5							0/1					KMWH-KBFI [VR1301]
6.4		0.7	5/1				6/11	8	CERTIFIED A CORRECT RECORD:			
68.8	0.8	81.9	52/46	4/0	1/2	7/7	105/8	96	Pilot			
75.2	0.8	82.6	57/47	4/0	1/2	7/7	111/19	104	Approved:			
TOTALS, THIS FISCAL YEAR									C.O. or authorized deputy			

Pilot-time report submitted through last (or) day of this month, noted by (initials)

INSTRUMENT FLIGHT		NIGHT TIME	LANDINGS					CATAPULT	STD INST APPR. COMPLETED			REMARKS
ACT	SIM		CARRIER			FLIP	SEA / LAND		NO.	TYP	S	
			ARR	TAG	BOL							
0.5	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				KBFI-KNLC
0.0	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				TACINT
0.0	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				Humtified DCA
0.0	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				122 Line
0.0	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				SXN DCA
0.5	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				KNLC-KBOI
0.5	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				KBOI-KNLC
0.0	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				2v1 in R-2508
0.0	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				TACINT
0.0	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				KNLC-KMHV [HP]
0.0	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				KMHV [D/E] KFAT
0.0	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				KFAT-KSLC
0.0	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				KSLC-KNLC [VR1422]
0.5	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				KNLC-KBFI
0.3	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				KBFI-KMWH [VR1355]
0.5	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0	1	2		KMWH-KBFI [VR1355]
0.3	0.0	0.0	0/0	0/0	0/0	0/0	0/1	0				KBFI-KNLC
3.1	0.0	0.0	0/0	0/0	0/0	0/0	0/17	0	CERTIFIED A CORRECT RECORD:			
75.2	0.8	82.6	7/4	4/0	1/2	7/7	111/19	104	Pilot Approved:			
78.3	0.8	82.6	7/4	4/0	1/2	7/7	111/36	104				
TOTALS, THIS FISCAL YEAR									C.O. or authorized deputy			

UNCLASSIFIED

Jun 2019 Walker, Charles

Page - 1

DAY	AIRCRAFT		CODE	PILOT TIME				SPECIAL CREW TIME
	FRAME	SERIAL		TOTAL PILOT	FIRST PILOT	CO-PILOT	A/C CMDR.	
2	FA-18E	BASELINE A/C	1A1	2.2	2.2		2.2	
3	FA-18E	BASELINE A/C	1A6	1.3	1.3		1.3	
4	FA-18E	BASELINE A/C	1A6	1.5	1.5		1.5	
10	FA-18E	BASELINE A/C	1A6	1.8	1.8		1.8	
11	FA-18E	BASELINE A/C	1A6	1.3	1.3		1.3	
12	FA-18E	BASELINE A/C	1A1	3.3	3.3		3.3	
13	FA-18E	BASELINE A/C	1A6	1.2	1.2		1.2	
18	FA-18E	BASELINE A/C	1A6	1.5	1.5		1.5	
19	FA-18E	BASELINE A/C	1A1 1A6	2.5	2.5		2.5	
20	FA-18E	BASELINE A/C	1A1 1A7	5.6	5.6		5.6	
21	FA-18E	BASELINE A/C	1A7	3.5	3.5		3.5	
23	FA-18E	BASELINE A/C	1A1	2.2	2.2		2.2	
26	FA-18E	168477	1A1	1.7	1.7		1.7	
27	FA-18E	168480	1A1	1.4	1.4		1.4	
28	FA-18E	168480	1A1	2.6	2.6		2.6	
28	FA-18E	168480	1A1	1.4	1.4		1.4	
30	FA-18E	168480	1A1	1.6	1.6		1.6	
30	FA-18E	168480	1A1	2.3	2.3		2.3	
30	FA-18E	168480	1A1	1.7	1.7		1.7	
TOTAL THIS PAGE		40.6		40.6	40.6		40.6	
BROUGHT FORWARD		2003.9		235.3	235.3		235.3	
TOTAL TO DATE		2044.5		275.9	275.9		275.9	
TOTAL ACCUM. PILOT TIME				TOTALS, THIS FISCAL YEAR				

INSTRUMENT TIME		NIGHT TIME	LANDINGS					CATAPULT	STD INST APPR. COMPLETED			REMARKS	
ACT	SIM		CARRIER			FCLP	SEA/ LAND		NO.	TYP	S		
			ARR	T&G	BOL								
0.5							0/1						
							0/1						
							0/1						
							0/1						
							0/1						
1							0/2						
							0/1						
							0/1						
							0/2						
0.5							0/3						
0.8							0/2	1	2				
0.3							0/1						
							0/1					FLYING	
							0/1					KNLC-KSLC	
							0/1					KSLC-KSTL	
							0/1					KSTL-KMDT	
0.5							0/1					KMDT-KSTL	
							0/1					KSTL-KGJT	
							0/1					KGJT-KNLC	
3.6							0/24	CERTIFIED A CORRECT RECORD					
75.2	0.8	82.6	7/4	4/0	1/2	7/7	111/19	##					Pilot
78.8	0.8	82.6	7/4	4/0	1/2	7/7	111/43	##	Approved				
TOTALS, THIS FISCAL YEAR								C.O. or authorized deputy					

UNCLASSIFIED

Enclosure (13) 5 of 6

UNCLASSIFIED

Enclosure (13) 6 of 6

Enclosure (13) 6 of 6

[illegible]

SSAN (OR CMD) ----- NEW REQ ? --- PRINT - NAME -----
(`X` TO EXIT, PF##, PB##) PF8 OR ENTER - PAGE FORWARD PF7 - PAGE BACK
-- PERSONAL DATA - PRIVACY ACT OF 1974 --- CURRENT MMPA AS OF 19/08/09 --
(b) (3) (A), (b) (6) WALKE 03 SB 01 OF 01
08 MJ: LB:3800 LC:3897 SA:T SX:2 TK:081215 TU:888888 TH:000000
FIXED/OPEN/HISTORY
SB-LV* ENTRY-OPEN-DT 190726 01 08 1 ENTRY-CLSD-DT 190726 01 08 1 ACTN 03
DEPART 190720 RTRN 190725 AUTH-NR PC03482 TYPE A ACCT-TYPE 1
DAYS-COUNT 006 AREA 1 ENTRY-OPEN-CLOSD A
SB-LV* ENTRY-OPEN-DT 190710 09 07 2 ENTRY-CLSD-DT 190710 09 07 2 ACTN 03
DEPART 190705 RTRN 190709 AUTH-NR PC03472 TYPE A ACCT-TYPE 1
DAYS-COUNT 005 AREA 1 ENTRY-OPEN-CLOSD A
SB-LV* ENTRY-OPEN-DT 180919 17 09 2 ENTRY-CLSD-DT 180919 17 09 2 ACTN 03
DEPART 180910 RTRN 180919 AUTH-NR PC03211 TYPE A ACCT-TYPE 1
DAYS-COUNT 010 AREA 1 ENTRY-OPEN-CLOSD A
** END OF INQUIRY.

CNATRINST 1500

NAVAL AVIATOR AVIATION TRAINING JACKET (ATJ) SUMMARY CARD

NAME (LAST, FIRST, AND MIDDLE) WALKER, CHARLES Z		RANK/SERVICE ENS / USN		SSN ***-**-****		SEX/RACE/ETHNIC CODE MEY	
COLLEGE EMBRY-RIDDLE A.U.	MAJOR/DEGREE AERO ENG	PROCUREMENT SOURCE 7	AQT 8	FAR 8	BI 0	DATE OF COMMISSION 15-DEC-2008	
PERMANENT HOME OF RECORD (b) (3) (A), (b) (6)		PLACE OF BIRTH SANTA CLARA, CA		DATE OF BIRTH 07-JUL-1986			
TYPE OF TRAINING <input checked="" type="checkbox"/> PILOT <input type="checkbox"/> STRIKE <input type="checkbox"/> MARITIME <input type="checkbox"/> E-2/C-2 <input type="checkbox"/> E-6 <input type="checkbox"/> NFO <input type="checkbox"/> NAV <input type="checkbox"/> STRIKE <input type="checkbox"/> STRIKE FIGHTER				AVW <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> HELICOPTER <input type="checkbox"/> V-22 <input checked="" type="checkbox"/> ATDS(E-2/C-2)		ANTHRO CODES SEH - TTR - BKL - SH 12-12-4-5	

PHASE OF TRAINING	DATE REPORTED	DATE COMPLETED	RAW SCORES			NAVY STANDARD SCORE						PRIMARY AGGREGATE SCORE
			FLIGHT	ACADEMIC	SIM	FLIGHT	ACADEMIC	SIM	FLIGHT	ACADEMIC	SIM	
PREFLIGHT	22-MAY-09	1 JUL 09	N/A	99		N/A	60					
PRIMARY	20 JUL 09	19 Apr 10	1.2172	98.67		65.1	62.72					67.26
INTERMEDIATE Jet	14 June 2010	11 Jan 11	3.043	98.42		51.3	59.7					
ADVANCED Strike	14 Jan 2011	16 May 2011	3.043	98.00		67.6	52.8					COMPOSITE SCORE
OTHER Combined												246

SUMMARY OF FLIGHT AND SIMULATOR TRAINING IN THE NAVAL TRAINING COMMAND

SQUADRON	A/C/SIM MODEL	TOTAL NUMBER OF EVENTS		TOTAL NUMBER OF HOURS		FIRST PILOT HOURS		CO-PILOT HOURS		SPECIAL CREW HOURS		NIGHT HOURS		INSTRUMENT HOURS	
		SYL	N-SYL	SYL	N-SYL	SYL	N-SYL	SYL	N-SYL	SYL	N-SYL	SYL	N-SYL	ACTUAL	SIMULATED
VT28	T3AC48	3	87.1	5.3	67.5	4.5	19.6	0.8	-	-	-	12.4	-	9.9	8.7
VT28	2B37131	3	40.0	3.9	40.0	3.3	-	-	-	-	-	-	-	-	37.4
VT-22	2F138E	62	-	89.3	-	89.3	-	-	-	-	-	1.1	-	-	50.3
VT-22	T45 A	10	1	15.9	1.6	13.5	-	2.4	-	-	1.6	7.0	-	.4	11.5
VT-22	T45 C	58	1	67.9	1.2	66.1	-	6.8	-	-	1.2	13.3	-	1.6	10.7
VT-22	2F138E	21	-	26.3	-	26.3	-	-	-	-	-	3.9	-	-	8.3
VT-22	T45A	1	1	.5	1.1	.4	-	.1	-	-	1.1	-	-	-	-
VT-22	T45 C	77	6	80.5	7.0	75.4	.9	5.1	-	-	6.1	10.1	-	4.2	6.0

REASON FOR ATTRITION (ENTER CODE)	PHASE/STAGE AT TIME OF ATTRITION	DATE OF ATTRITION	PIPELINE CHANGE / PROGRAM CHANGE APPROVED <input type="checkbox"/> YES <input type="checkbox"/> NO
DATE OF DESIGNATION 13 May 2011	FLEET REPLACEMENT SQUADRON ASSIGNMENT	NEW PIPELINE / PROGRAM	

CNATRA 1542 95 (Rev. 9-00)

NAVAL AVIATOR AVIATION TRAINING JACKET (ATJ) SUMMARY CARD

PRIOR FLIGHT TIME

FAA PILOT CERTIFICATE ☐ PRIVATE ☐ COMMERCIAL ☐ ATP

PILOT - IN - COMMAND (PIC) HOURS:

DESIGNATED MILITARY AVIATOR SERVICE HOURS: PIC HOURS:

BOARD ACTIONS / DIRECT REFERRALS

PHASE	STAGE	REASON	ACTION		
			BOARD (ENTER VOTE)	CO	CTW
API	N/A	None	-	✓	-

CARRIER QUALIFICATIONS (FOR STUDENT NAVAL PILOTS ONLY)

PHASE	DATE QUAL	A/C MODEL	LANDINGS		REMARKS
			T & G	ARRESTED	
INTERMEDIATE					
ADVANCED	3 Apr 11	T45 C	4	10	

COMMENTS:

Record all flight violations, accidents, incidents, unsatisfactory events, delinquency reports, and administrative actions on this sheet. Information concerning accidents/incidents REQUIRE SPECIAL HANDLING IAW OPNAVINST 3750.6. An entry shall be made from each squadron listing NONE where appropriate.

FLIGHT VIOLATIONS/ACCIDENTS/INCIDENTS

DATE	ACTIVITY	BRIEF DESCRIPTION	CAUSE	SIGNATURE/TITLE
19 Apr 10	VT-28	NONE	NONE	(b) (3) (A), (b) (6)
16 May 11	VT-22	None		

UNSATISFACTORY EVENTS STUDENTS

[illegible]

STUDENT PROGRESS DISPOSITION BOARD

DATE	TRARON	STAGE/EVENT	MAJOR DIFFICULTY	SIGNATURE/TITLE
1 July 09	NASC	PREFLIGHT	NONE	(b) (3) (A), (b) (6)
19 April 10	VT-28	Primary	NONE	
16 May 11	22	NONE		

REMARKS

STUDENTS' NAME (Last, First, Middle Initial)

WALKER, CHARLES, Z

RANK

END

T **CCM**

NATOPS EVALUATION REPORT

1. NAME (LAST, FIRST, MIDDLE INITIAL): WALKER, CHARLES, Z		2. RANK: LT	3. EDPI NUMBER: ON FILE	4. DATE OF LAST EVALUATION: 28 MAR 2018
5. UNIT: VFA-151	6. CREW POSITION & QUALIFICATIONS: PILOT		7. HOURS IN MODEL: 1494	8. DATE OF CHECK FLIGHT: 24 SEP 2018
9. TOTAL FLIGHT HOURS: 1734.6	10. AIRCRAFT MODEL: F/A-18E/F	11. AIRCRAFT BUNO: 000001	12. FLIGHT DURATION: 1.0	13. EXPIRATION DATE: 30 SEP 2019

NATOPS EVALUATION

14a. REQUIREMENT	14b. DATE COMPLETED	14c. GRADE		
		Q	CQ	U
IMMEDIATE ACTION EXAM	24 SEP 2018	Q		
OPEN BOOK EXAM	22 SEP 2018	Q		
CLOSED BOOK EXAM	22 SEP 2018	Q		
ORAL EXAMINATION	24 SEP 2018	Q		
EVALUATION FLIGHT	24 SEP 2018	Q		

OVERALL FINAL GRADE: **QUALIFIED**

14d. REMARKS OF EVALUATOR:

LT WALKER HAS COMPLETED THE F/A-18E/F NATOPS CHECK FLIGHT IN THE VFYB TACTICAL OPERATIONAL FLIGHT TRAINER (TOFT).

ALL ASPECTS OF THE BRIEF, FLIGHT, AND DEBRIEF WERE IN ACCORDANCE WITH NATOPS, CNAFINST M-3710.7 (SERIES), AND SOP.

CREW RESOURCE MANAGEMENT WAS CONDUCTED IN ACCORDANCE WITH CNAFINST 1542.7 (SERIES).

A REVIEW OF ACM TRAINING RULES WAS CONDUCTED IN CONJUNCTION WITH THIS EVALUATION.

SEMI-ANNUAL EP REFRESHER SIM CONDUCTED ON 28 JULY 2018 WITH LCDR WRIGLEY.

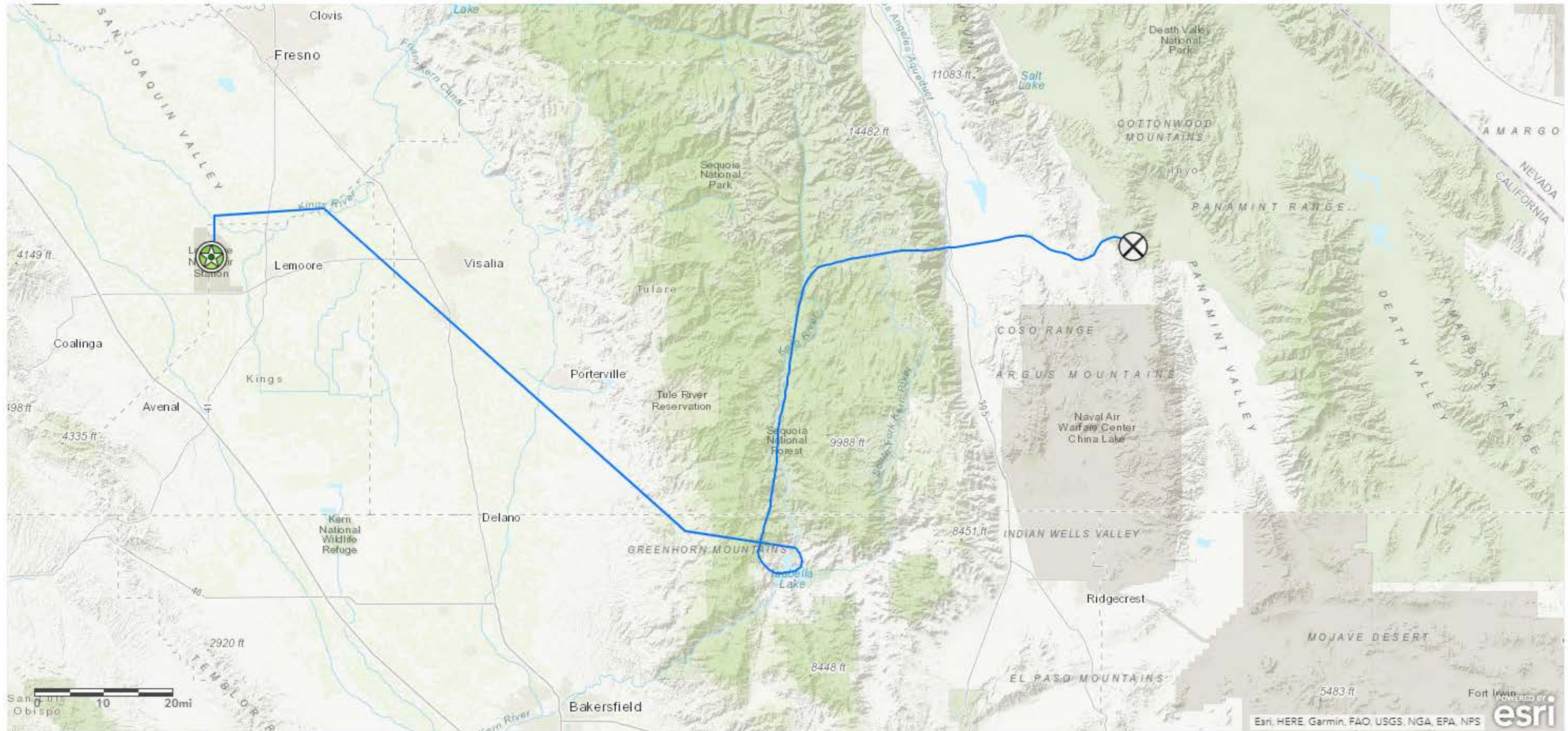
15a. PRINT NAME OF EVALUEE: WALKER, C. Z.	15b. RANK: LT	15c. DATE: 24 SEP 2018	15. SIGNATURE: (b) (3) (A), (b) (6) <i>LT, WALKER</i>
16a. PRINT NAME OF EVALUATOR: (b) (3) (A), (b) (6)	16b. RANK: LT	16c. DATE: 24 SEP 2018	(b) (3) (A), (b) (6) <i>WRIGLEY</i>
17. REMARKS OF UNIT COMMANDER: LT WALKER IS NATOPS QUALIFIED IN THE F/A-18E/F.			
18a. UNIT COMMANDER: (b) (3) (A), (b) (6)	18b. RANK: CDR	18c. DATE: 30 SEP 2018	18d. IG ATU (b) (3) (A), (b) (6)

NATOPS INSTRUMENT RATING REQUEST

1. NAME (LAST, FIRST, MIDDLE INITIAL): WALKER, CHARLES Z		2. RANK: LT		3. EDIPI NUMBER: ON FILE		4. DATE OF LAST EVALUATION: 24 MAY 2018						
5. UNIT: VFA-151		6. CREW POSITION & QUALIFICATIONS: PILOT		7. HOURS IN MODEL: 1513.5		8. DATE OF CHECK FLIGHT: 03 OCT 2018						
9. AIRCRAFT MODEL: F/A-18E/F		10. AIRCRAFT BUNO: 000001		11. FLIGHT DURATION: 1.0		12. EXPIRATION DATE: 31 OCT 2019						
13. MISCELLANEOUS SUMMARY				18. INSTRUMENT PILOT TIME								
ITEM		LAST 6 MO.		LAST 12 MO.		TOTAL ALL YEARS						
PRECISION APPROACHES		32		53		236.7						
NON-PRECISION APPROACHES		10		18		69.5						
14. TOTAL PILOT TIME		1644.9		INSTRUMENT PILOT TIME TOTAL		306.2						
15. CURRENT RATING: STANDARD		16 ISSUED RATING: STANDARD		17. SIGNATURE OF APPLICANT: (b) (3) (A), (b) (6)		19. THIS IS TO CERTIFY THAT THE APPLICANT HAS...						
						<input checked="" type="checkbox"/> SATISFACTORILY <input type="checkbox"/> UNSATISFACTORILY COMPLETED THE WRITTEN EXAMINATION FOR AN INSTRUMENT RATING AS REQUIRED BY THE NATOPS INSTRUMENT FLIGHT MANUAL.						
						20. 1 ST EXAM (Grade): PASS 21. 2 ND EXAM (Grade): N/A 22. 3 RD EXAM (Grade): N/A 23. EXAMINING OFFICER: (b) (3) (A), (b) (6) 24. RANK: LT						
						25. UNIT: VFA-122 26. DATE OF EXAM: 27 SEP 2018						
FLIGHT EVALUATION	27. PART ONE (Basic Instruments)			Q	U	28. PART TWO (Instrument flight within control areas with emphasis on VOR/TACAN where feasible)			Q	U		
	1	INSTRUMENT TAKEOFF (Optional)			Q		1	FLIGHT PLANNING			Q	
	2	CLIMBING, DESCENDING, & TIMED TURNS*			Q		2	CLEARANCE COMPLIANCE			Q	
	3	STEEP TURNS*			Q		3	INSTRUMENT APPROACHES			Q	
	4	RECOVERY FROM UNUSUAL ATTITUDES*			Q		4	COMMUNICATIONS & NAVIGATION EQUIPMENT			Q	
	5	VOR/TACAN POSITIONING			Q		5	EMERGENCY PROCEDURES			Q	
	6	PARTIAL PANEL AIRWORK*			Q		6	VOICE PROCEDURES			Q	
	7						7					
*Not required when evaluation is conducted under actual instrument conditions.												
29. FLIGHT EXAMINER: (b) (3) (A), (b) (6)				30. RANK: LCDR		31. DATE: 04 OCT 2018		32. SIGNATURE: (b) (3) (A), (b) (6)				
33. REMARKS: LT WALKER IS NATOPS INSTRUMENT QUALIFIED IN ACCORDANCE WITH CNAFINST M-3710.7 (SERIES).												
34. UNIT COMMANDER: (b) (3) (A), (b) (6)				35. RANK: CDR		36. DATE: 04 OCT 2018		37. SIGNATURE: (b) (3) (A), (b) (6)				

OPNAV 3710/2 (REV 4/2016)

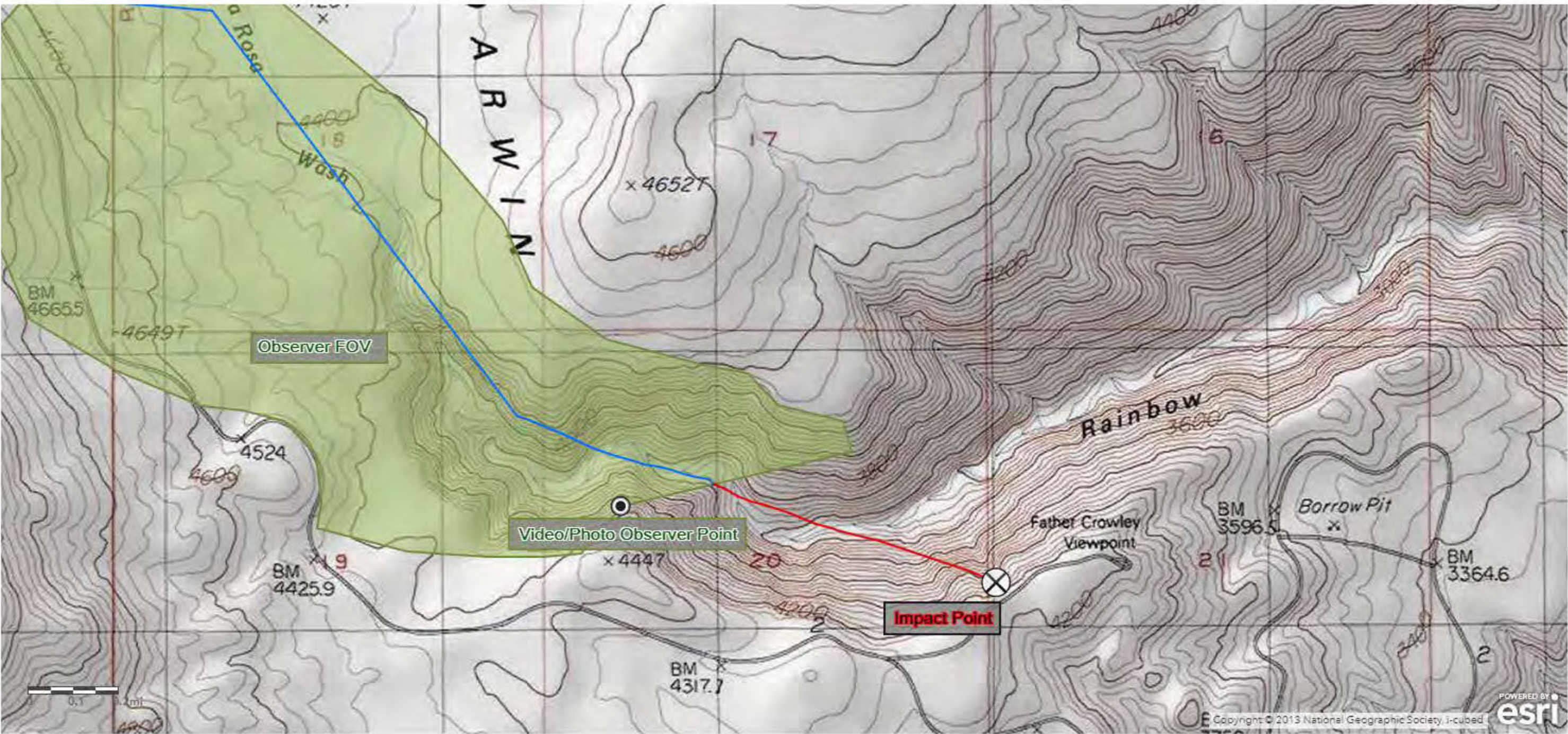
FLIGHT PROFILE MAP
31 JUL 19
ESTIMATED FLIGHT PATH BASED ON WINGMAN DATA



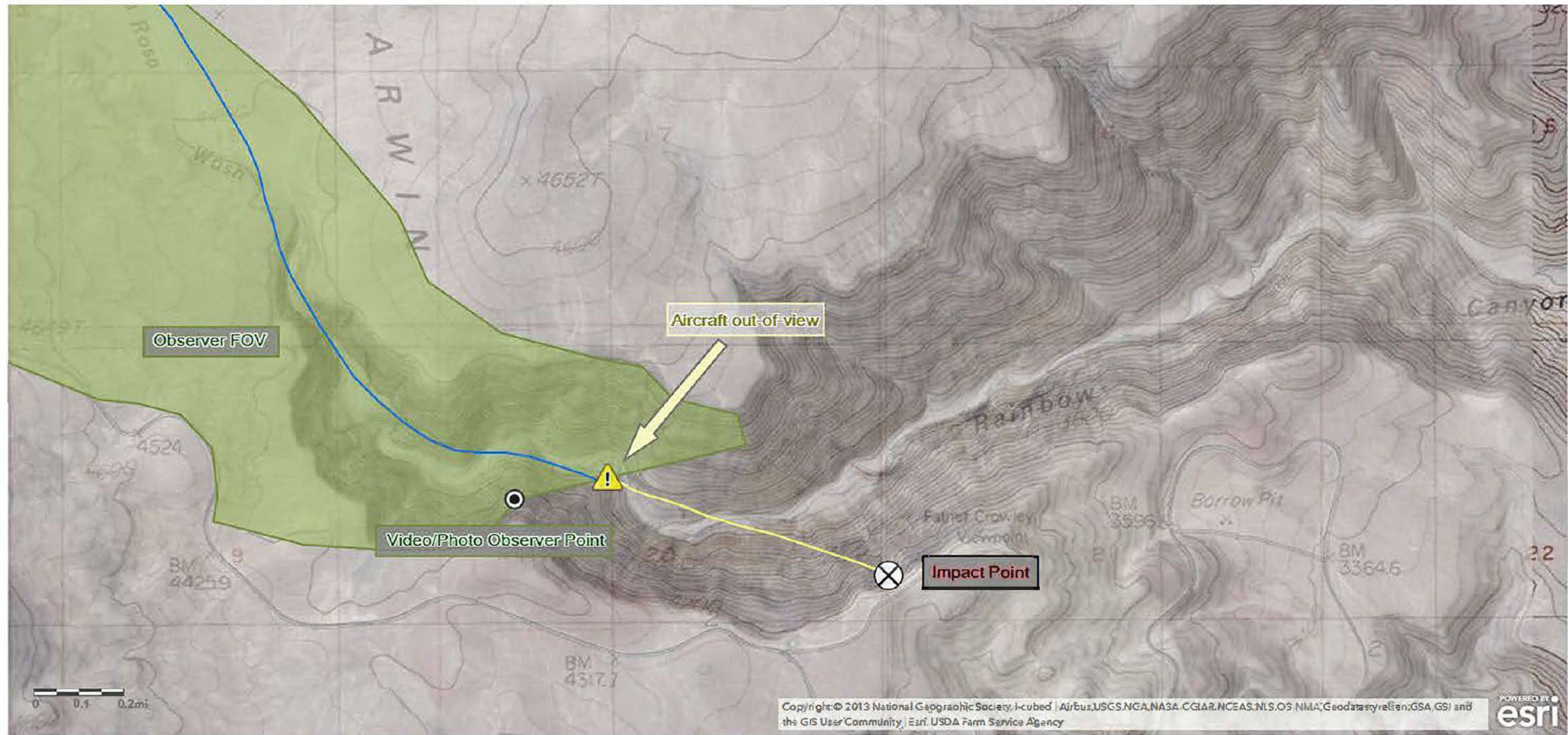
FLIGHT PROFILE MAP
31 JUL 19
ESTIMATED FLIGHT PATH



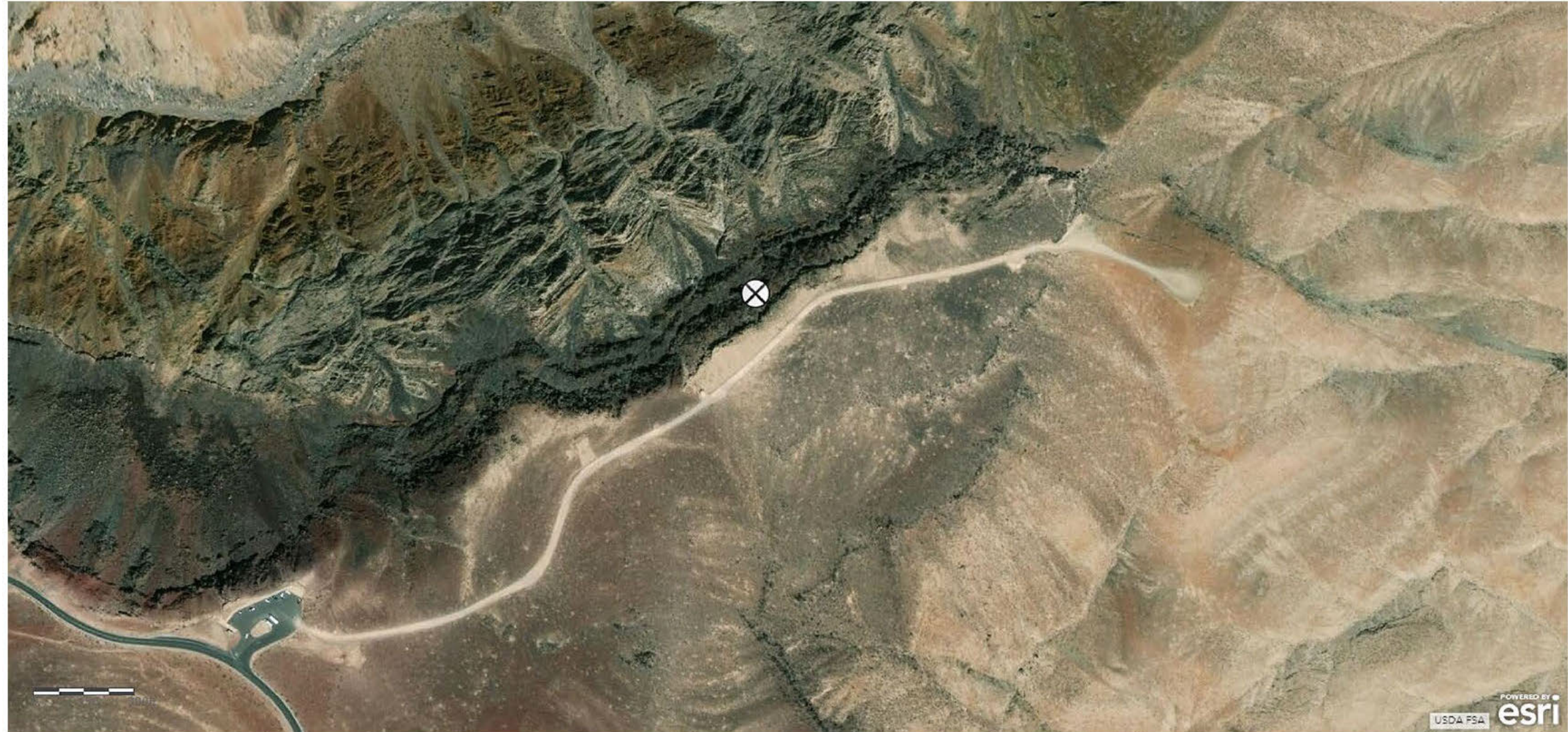
FLIGHT PROFILE MAP
31 JUL 19
ESTIMATED FLIGHT PATH



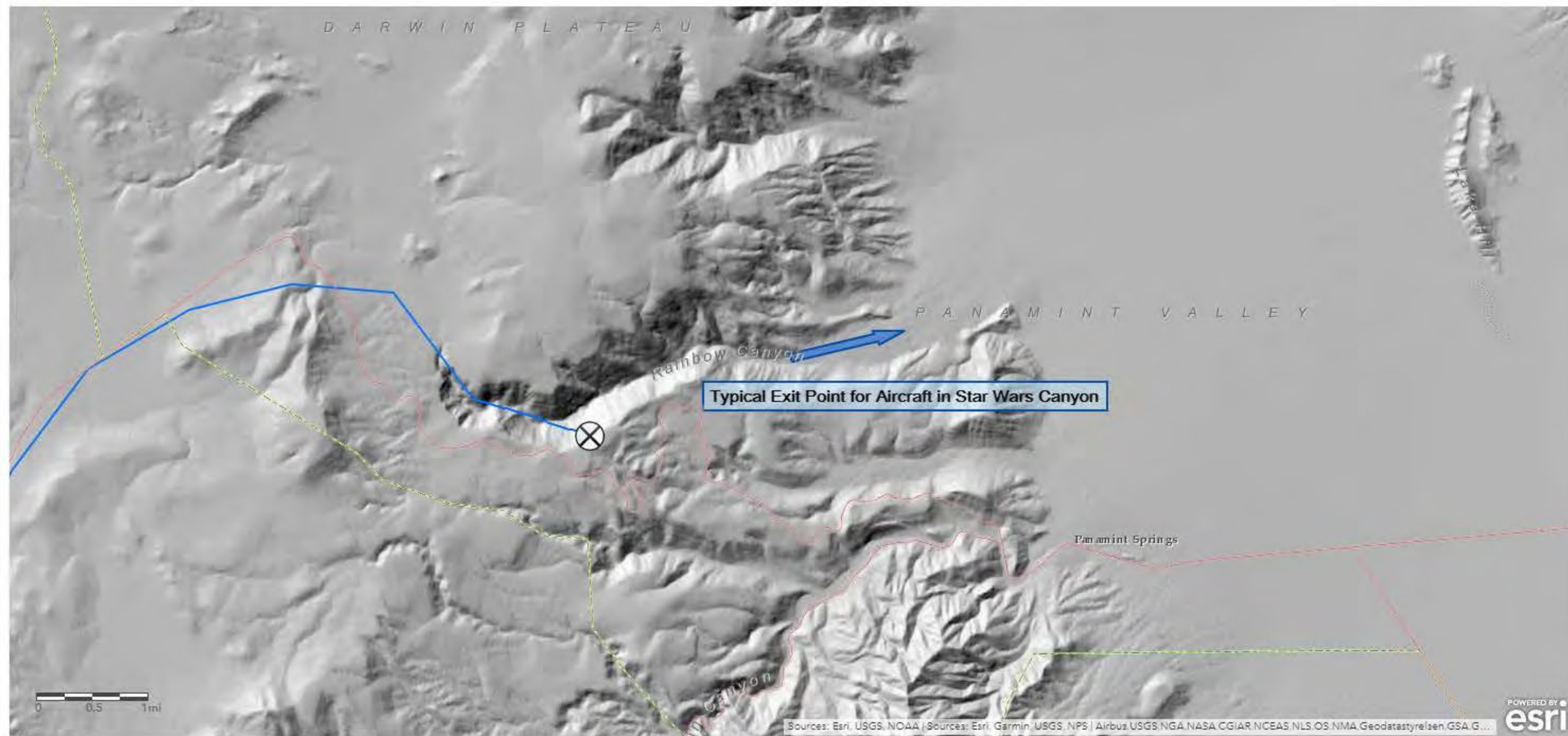
FLIGHT PROFILE MAP
31 JUL 19
ESTIMATED FLIGHT PATH



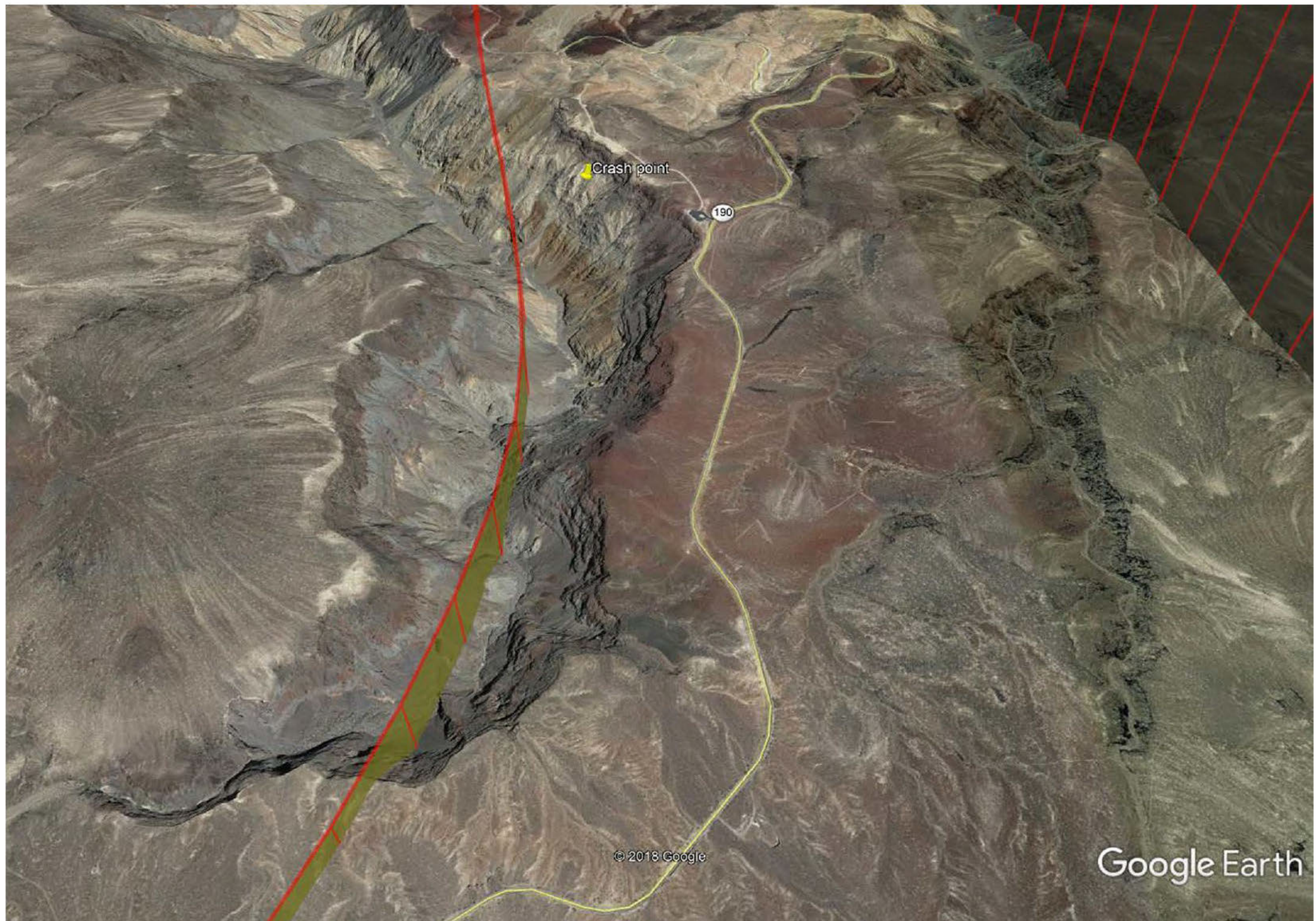
FLIGHT PROFILE MAP
31 JUL 19
IMPACT LOCATION



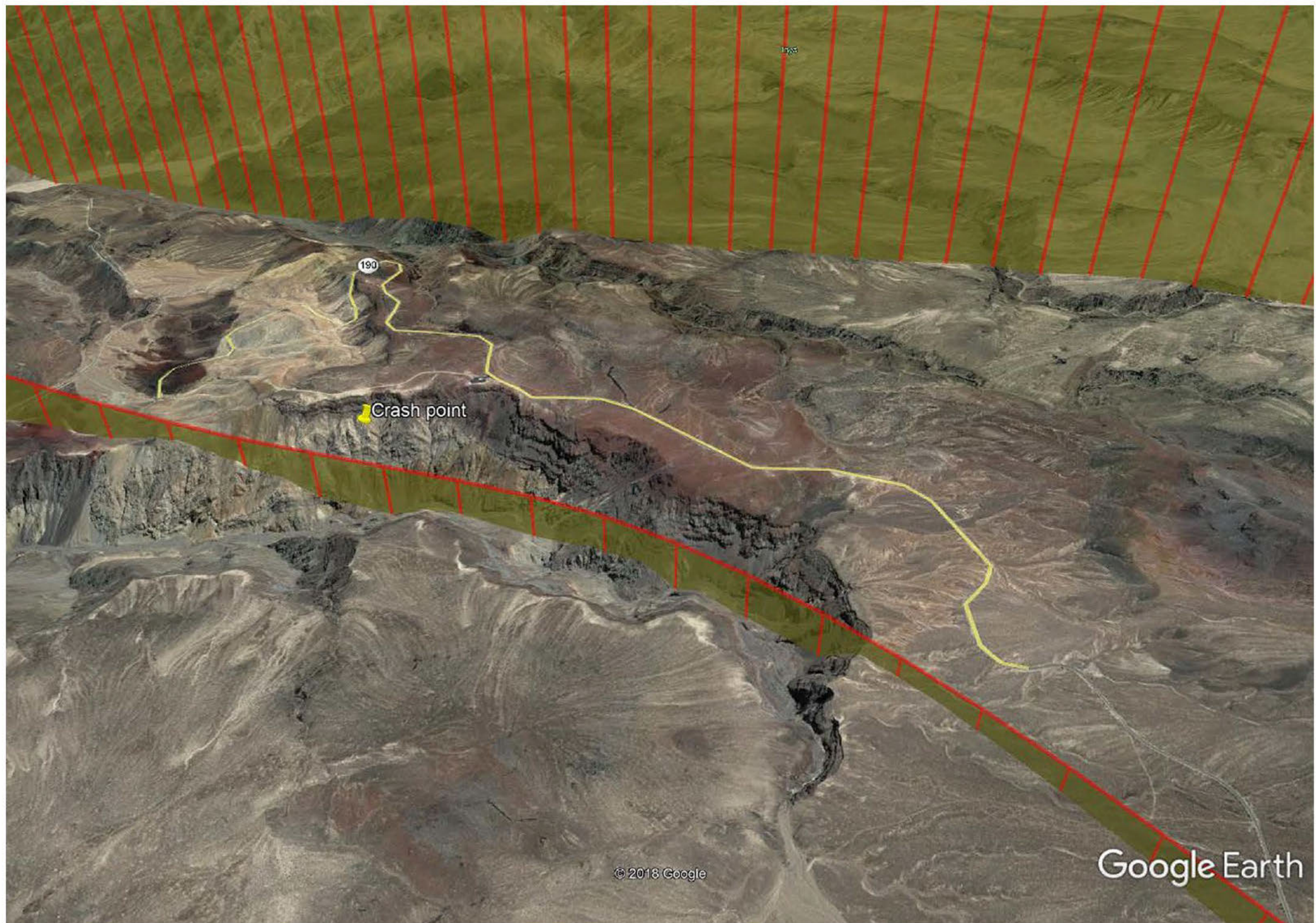
FLIGHT PROFILE MAP
31 JUL 19
TYPICAL EXIT POINT FOR AIRCRAFT IN STARWARS CANYON



FLIGHT PROFILE MAP
30 JUL 19



FLIGHT PROFILE MAP
30 JUL 19



DEPARTMENT OF THE NAVY
VOLUNTARY STATEMENT

1. PLACE

VFA-151 Briefing Space 1

2. DATE

12 Aug 2019

I, LT (b) (3) (A), (b) (6)

, make the following
free and voluntary statement to CDR (b) (3) (A), (b) (6)
whom I know to be investigating an aviation mishap on 31 Jul 2019

I make this statement of my own free will and without any threats or promises extended to me. I fully understand that this statement is given concerning my knowledge of the events surrounding the flight mishap on 31 Jul 2019 and the death of LT Charles Z. Walker.

LT Walker was the flight lead for event one, and he briefed the flight. We briefed on time in mission planning spaces for 30 minutes. The brief was of good quality. We were on a scheduled low level in VR-209, but changed to low level on the Sidewinder low level route in R-2508 due to weather, followed by air-to-surface training, then air-to-air training if we had enough time. The weather was clear in the R-2508 complex. VR-209 was east of the Nellis range near Las Vegas, NV. The brief covered training rules, NATOPS, and ORM. Nothing was noted for personal ORM in the brief by me or LT Walker. LT Walker briefed a personal minimum altitude (MINALT) of 500 feet above ground level (AGL) due to a lack of currency in the low altitude environment and a 200 foot MINALT for me since I was low altitude current. Nothing significant to report for the brief. I don't think anyone else was present during the brief.

We took off on time to a couple minutes early and I landed at around 1115. We performed visual inspections ("clean and dry" checks) after join up post launch. Hornet 5 routing and entered R-2508 at point ROMOF. We executed a G-awareness maneuver ("G-warm") over Lake Isabella. LT Walker did an inverted check. We executed a right hand descending 270 turn and established into a lead-trail formation at 1.5 to 2.0 nm, with myself in trail. We verbalized low altitude training (LAT) checks between point A and point B on the Sidewinder low level. The plan was to fly the Sidewinder along points A, B, C, the Jedi transition, to point J. We flew west to east along the Jedi transition. Wingman aircraft impacted south side of Rainbow Canyon, or Star Wars Canyon in Death Valley National Park. The aircraft hit at the top of the wall at roughly 0950 31 July 2019. The impact direction of LT Walker's aircraft was from west to east. I did not see the aircraft impact the ground. Up until the aircraft mishap, the mission was proceeding as briefed. I was in a hard right hand pull, reversed to the left, and saw a huge fire ball rising up into a column for fire and smoke. I could not determine if it was controlled flight into terrain (CFIT) or a result from a departure from controlled flight. I was unable to make an assessment since I was about 1.5 to 2.0 nm in trail. The first thing I saw was an explosion. I pulled up and made several radio calls trying to raise LT Walker on our tactical frequency. I then made a call on the low level common frequency, "99 low level stay clear of Star Wars canyon." I then contacted Joshua Approach control and informed them of the situation, "Mayday, mayday, mayday, Switch 11 down aircraft in Star Wars canyon." I then began a conversation about search and rescue (SAR) assets. I opened the on-scene commander checklist and orbited overhead at 10,000 feet mean sea level (MSL). I did not turn on my tapes until about 10 minutes after the incident. I did have a GoPro video recording during the low level throughout the incident. I did not see any people in the area. I did see cars in the paved parking lot area. I did not see any people along the dirt path from the parking lot. I did see a truck drive from parking lot down dirt path toward the explosion. Never saw people along dirt path. Maybe saw people in parking lot getting into cars. There were roughly 7-8 cars in the parking lot. After about 10 minutes I tried to reach LT Walker on the designated SAR frequency. I climbed to 16,000 feet MSL to try to reach our squadron base on the radio, but they did not respond. I tried calling event two from VFA-151 who were doing a red air mission in Superior Valley, and they switched to my tactical frequency. Event two pilots were LCDR (b) (3) (A), (b) (6) and LCDR (b) (3) (A), (b) (6). I told them aircraft 400 is down. Event two climbed to 27,000 feet MSL overhead as a radio relay to our squadron base. A VFA-94 aircraft heard conversation with Joshua approach and contacted our squadron base. Event two landed around 1130, approximately 15-20 minutes after I did.

LT Walker was on leave the week prior. I believe he was travelling to Philadelphia and Washington State. His wife lives and works in (b) (3) (A), (b) (6). LT Walker lives in a house around the corner from me near the Lemoore golf course. We don't hang out together outside of the squadron. LT Walker seemed fine mentally and there didn't seem to be any personal issues affecting him.

(b) (3) (A), (b) (6)

NO FURTHER ENTRIES THIS PAGE

**DEPARTMENT OF THE NAVY
VOLUNTARY STATEMENT**

1. PLACE
VFA-151 CO Office

2. DATE

29 Aug 2019

I, CDR Chad Heirigs, Commanding Officer, VFA-151, make the following
free and voluntary statement to CDR(b) (3) (A), (b) (6)
whom I know to be investigating an aviation mishap on 31 Jul 2019

I make this statement of my own free will and without any threats or promises extended to me. I fully understand that this statement is
given concerning my knowledge of
the events surrounding the flight mishap on 31 Jul 2019 and the death of LT Charles Z. Walker.

On 30 July 2019, I flew with LT Walker on an air-to-surface training flight. This was a change to the flight schedule as LT Walker was double-scheduled that day. He was the training officer and needed to attend the scheduled range scheduling brief at the wing and therefore could not make his flight as scheduled. I briefed and led the flight with LT Walker. No issues noted during the brief and all pertinent items were covered. Post-mission we proceeded to fly the Sidewinder low level training route along the Jedi transition before we executed our RTB. We flew in the low level environment for less than 10 minutes. No issues during the flight or during the debrief were discussed as it relates to the low level training environment.

LT Walker was well known in the squadron to be a good pilot and was well respected. He was also well known for enjoying low level flying. He did not have a reputation for flat-hatting. He never talked about getting photographed airborne.

I do not believe there were any issues with LT Walker and his spouse. Although he kept to himself outside of work hours, he and his wife spent as much time together as possible given the fact that she lived out of state. He made several trips to see her since we returned from deployment. I have no knowledge of any difficulties in their relationship (infidelity or conversations about divorce). I believe LT Walker had a strong desire to live. I do not know of any suicidal ideations held by LT Walker. I think LT Walker enjoyed his work, and was planning to stay in the navy and transfer to VFA-113 for department head orders. LT Walker was very fit and worked out a lot. LT Walker ate very well, even on the ship, often using Tupperware to store fresh food in the squadron ready room.

There is no focus in the squadron on video collection. There is no discussion about photography or seeking out "cool photos" from outside entities such as those in Star Wars canyon. In fact, when the photo of a USAF F-35A was released on social media leading to a new discussion about the Sidewinder low level recently, we discussed the issue during an AOM. The USAF and USN leadership announced a ban on certain activities on the Sidewinder low level, specifically no flat-hatting and no pre-coordination with photographers in the area. This was emphasized in my command and I believe it was, and still is, a non-issue. I put out that no radio calls announcing your presence on the low level other than for safety of flight were to be made, which was in keeping with the joint USAF and USN leadership guidance.

NO FURTHER ENTRIES THIS PAGE

Approved in lieu of signature

DEPARTMENT OF THE NAVY
VOLUNTARY STATEMENT

1. PLACE

VFA-151 Ready Room

2. DATE

10 Sep 2019

I, LT (b) (3) (A), (b) (6), make the following
free and voluntary statement to CDR (b) (3) (A), (b) (6)
whom I know to be investigating an aviation mishap on 31 Jul 2019

I make this statement of my own free will and without any threats or promises extended to me. I fully understand that this statement is
given concerning my knowledge of
the events surrounding the flight mishap on 31 Jul 2019 and the death of LT Charles Z. Walker.

I was the Squadron Duty Officer (SDO) on 31 Jul 2019 and observed both LT Walker and LT ^{(b) (3) (A), (b)} prior to their flight. I did not
notice anything out of the ordinary with respect to LT Walker prior to the flight. I did not notice any personal ORM issues by
either pilot.

NO FURTHER ENTRIES THIS PAGE

(b) (3) (A), (b) (6)

DEPARTMENT OF THE NAVY
VOLUNTARY STATEMENT

1. PLACE

VFA-86 CO Office

2. DATE

11 Sep 2019

I, LCDR (b) (3) (A), (b) (6)

, make the following
free and voluntary statement to CDR (b) (3) (A), (b) (6)
whom I know to be investigating an aviation mishap on 31 Jul 2019

I make this statement of my own free will and without any threats or promises extended to me. I fully understand that this statement is given concerning my knowledge of the events surrounding the flight mishap on 31 Jul 2019 and the death of LT Charles Z. Walker.

I was the roommate of LT Walker on the USS John C. Stennis during our last deployment. I did not know of any issues with LT Walker and his wife. He seemed to have a very good work-life balance. We were friends on deployment, but did not socialize much outside of work related events. I did not know of any personal issues of LT Walker.

LT Walker was well-respected and a good pilot. He was well known in the squadron for his preparation before flights involving low level flight. LT Walker would always know the minimum safe altitudes (MSA) and diverts along a low level route. We went on a cross country training flight and he prepared well for any low level training routes we intended to fly. He was the most proficient low level pilot in the squadron.

NO FURTHER ENTRIES THIS PAGE

(b) (3) (A), (b) (6)

LCDR, USN



National Park Service
U.S. Department of the Interior

Death Valley National Park
Box 579 CA HWY 190
Death Valley, CA 92328



(b) (3) (A), (b) (6)

DEVA Case #:

Voluntary Witness Statement

TO BE COMPLETED BY WITNESS (PLEASE PRINT):

Last Name: (b) (3) (A), (b) (6)	First Name: (b) (3) (A), (b) (6)	M.I.	Telephone Number: (b) (3) (A), (b) (6)
Street Address: (b) (3) (A), (b) (6)	City:	State:	Zip Code:
Date of birth:		Date of statement: 07/31/2019	

I, (b) (3) (A), (b) (6) do hereby make the following statement of my own free will and accord concerning the matter of _____

Which occurred at (location) big pool

On the date of ____ / ____ / ____ at ____ A.M. or P.M.
(Circle one)

YOU ARE NOTIFIED THAT THE STATEMENTS YOU ARE ABOUT TO MAKE MAY BE PRESENTED TO A MAGISTRATE OR A JUDGE IN LIEU OF YOUR SWORN TESTIMONY AT A PRELIMINARY EXAMINATION. ANY FALSE STATEMENT THAT YOU MAKE AND DO NOT BELIEVE TO BE TRUE MAY SUBJECT YOU TO CRIMINAL PUNISHMENT.

In your own words describe in detail the WHO. WHAT. WHEN. WHERE. & HOW.

Statement:

on était au bord de la falaise environ 25 m et
un avion est crashé en plein dans la falaise, il
est att. crashé en plein dessous, on ne le pas vu
sejurer. on a vu le nombre d'élus de l'élus
nous nous étions était brulé. Mais j'ai plus
pu que mes 6 autres partenaires. par ce la
par et les élus selon nous nous. on a été
brulé partement tout. On en voit par nous
on est dans on vie.

TO BE COMPLETED BY INVESTIGATING OFFICER:

Investigating Officer(s):

Badge #(s): Investigating Officer(s) Signature(s):

Date Signed:

(b) (3) (A), (b) (6)

Page: of

*Form Revised: 03/12/2012

Enclosure (34) 1 of 2

Unofficial translation of French foreign national Marc Moreau's witness statement, originally handwritten in French, taken in Death Valley National Park, CA by the National Park Service.

Translated Statement:

We were at the edge of the cliff about 25 meters and an airplane (illegible - maybe "crashed/hit") " right into the cliff, it is crashed right (illegible - maybe "into it"), we did not see him/it (eject). We (illegible) debris was toward us and we were burned. I was farther away than my 6 other partners. I saw the fire and the debris fly toward us. We were all burned severely. We were very scared but we are all alive.

3. Other Property Damage. At 1415 on 31 July 2019, (b) (3) (A), (b) (6) sent an email stating that her son (b) (3) (A), (b) (6) lost his smartphone when he was running to escape.

4. Proximity to Crash. SAR team members stated that the 7 French nationals were standing at the end of the canyon's wall. The aircraft impacted about 40 feet directly below them.

5. Video of the Crash. One of the NCIS agents on scene stated that a US national has GoPro video showing the entire crash. That individual lives in the Bay area and his contact information is as follows:

(b) (3) (A), (b) (6)

NCIS stated the video showed nothing sensitive about the aircraft.

6. Communications with French Consulate: The point of contact at the French Consulate in Los Angeles is Ms. (b) (3) (A), (b) (6) (Deputy Consul). At 0830 on 1 August 2019, Mr. (b) (3) (A), (b) (6) (Director, OJAG Code 15) and other Code 15 staff spoke with Ms. (b) (3) (A), (b) (6) via telephone. Mr. (b) (3) (A), (b) (6) provided an overview of the claims process and has another phone call scheduled with Ms. (b) (3) (A), (b) (6) on 2 August 2019.

7. Please let me know if you have any questions.

Very Respectfully,

(b) (3) (A), (b) (6)

LT, JAGC, USN

RLSO SW BROFF China Lake

Staff Judge Advocate

Naval Air Weapons Station China Lake

(b) (3) (A), (b) (6)

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Email correspondence summary of Mr. (b) (3) (A), (b) (6), NAVAIR Engineer with CDR (b) (3) (A), (b) (6), USN

Various dates

From: (b) (3) (A), (b) (6) CIV USN COMNAVAIRSYSCOM (USA) (b) (3) (A), (b) (6)
Sent: Tuesday, September 3, 2019 2:42 PM
To: (b) (3) (A), (b) (6) CDR USN (USA) (b) (3) (A), (b) (6)
Subject: RE: 168471 Data

This was the info we derived for the 30 July at the point where he goes out of view:

30 July flight state
36.357093, -117.558178
4060 feet
550 KCAS (0.89 M)
Pitch: -3.5 deg.
Bank: 70 deg.
Heading: 78 deg

(b) (3) (A).

From: (b) (3) (A), (b) (6) CIV USN COMNAVAIRSYSCOM (USA) (b) (3) (A), (b) (6)
Sent: Tuesday, September 3, 2019 1:42 PM
To: (b) (3) (A), (b) (6) CDR USN (USA) (b) (3) (A), (b) (6)
Subject: RE: 168471 Data

Sorry about the delay. The altitude on 30 July at the point where the mishap aircraft went out of view in the video is approximately 4060 MSL feet.

Please keep in mind that the estimate of 50-75 feet lower is our best guess from the video at this time. We may refine it if we get additional information or analysis.

(b) (3) (A).

From: (b) (3) (A), (b) (6) CIV USN COMNAVAIRSYSCOM (USA) (b) (3) (A), (b) (6)
Sent: Thursday, August 29, 2019 5:36 AM
To: (b) (3) (A), (b) (6) CDR USN (USA) (b) (3) (A), (b) (6)
Subject: RE: 168471 Data

(b) (3) (A), (b)

On 30 July, the aircraft was at 4150 feet MSL when it passed over the south ridgeline. The ridgeline is approximately at 3863 feet MSL. That puts the aircraft about 290 feet AGL at that point. The aircraft was travelling at 570 KCAS at that point with minimal 1.6 Gs when crossing over the ridgeline. The pilot pulled max 4.6 Gs during that canyon run 6 seconds prior to the ridgeline crossing.

(b) (3) (A), (b) (6)
NAVAIR ASIST

From: (b) (3) (A), (b) (6) CIV USN COMNAVAIRSYSCOM (USA) (b) (3) (A), (b) (6)
Sent: Wednesday, August 28, 2019 9:58 AM
To: (b) (3) (A), (b) (6) CDR USN (USA) (b) (3) (A), (b) (6)
Subject: RE: 168471 Data

The 30 July aircraft was flying at 550 KCAS.

At this time, we believe the mishap aircraft was about 50-75 feet lower than the 30 July flight when it went out of view.

The KML file that I sent you can be loaded into Google Earth on a non-nmci machine. It is just the data that is behind the pictures that I sent you.

(b) (3) (A),

From: (b) (3) (A), (b) (6) CIV USN COMNAVAIRSYSCOM (USA) (b) (3) (A), (b) (6)
Sent: Wednesday, August 28, 2019 9:17 AM
To: (b) (3) (A), (b) (6) CDR USN (USA) (b) (3) (A), (b) (6)
Subject: RE: 168471 Data

Thank you reaching out. I can provide you with the information you want.

Based on the GoPro footage, engineering approximates the aircraft was travelling approximately 560 KCAS when it flies out of view.

I've enclosed the KML file and pictures that shows the flight path of the 30 July flight of the same BUNO obtained from the MU file.

(b) (3) (A), (b) (6)
NAVAIR ASIST
(b) (3) (A), (b) (6)

Email correspondence summary of CDR (b) (3) (A), (b) (6) USN with CDR (b) (3) (A), (b) (6) USN

Various dates

From: (b) (3) (A), (b) (6) CDR USN NAS LEMOORE CA (USA) (b) (3) (A), (b) (6)
Sent: Tuesday, August 13, 2019 8:51 AM
To: (b) (3) (A), (b) (6) CDR USN COMNAVAIRPAC SAN CA (USA)
(b) (3) (A), (b) (6) CDR USN (USA) <(b) (3) (A), (b) (6)>
Subject: Mishap Data

Gents,

NAVAIR got back to us this morning and the DFIRS memory chip was pulverized and completely unusable. We were also unable to recover the DMD, maintenance card, or RMM from the mishap pilot. Let me know if you have any questions or need anything for your reports.

R,
(b) (3) (A), (b) (6)

CDR (b) (3) (A), (b) (6)
VFA-113 PXO

(b) (3) (A), (b) (6)

From: (b) (3) (A), (b) (6) CDR USN NAS LEMOORE CA (USA) (b) (3) (A), (b) (6)
Sent: Wednesday, August 14, 2019 10:29 AM
To: (b) (3) (A), (b) (6) CDR USN (USA) (b) (3) (A), (b) (6)
Cc: (b) (3) (A), (b) (6) CDR USN COMNAVAIRPAC SAN CA (USA)
(b) (3) (A), (b) (6)
Subject: RE: Mishap Data

(b) (3) (A), (b) (6)

We reached out to Point Mugu, owner of L-16 NTR, and they did not have any information available based on his track number and VCS. NAVAIR does not have anything to recreate as none of his maintenance/mission data was recovered.

R,
(b) (3) (A), (b) (6)

From: (b) (3) (A), (b) (6) CDR USN NAS LEMOORE CA (USA) (b) (3) (A), (b) (6)
Sent: Thursday, August 15, 2019 2:16 PM
To: (b) (3) (A), (b) (6) CDR USN (USA) (b) (3) (A), (b) (6)
Cc: (b) (3) (A), (b) (6) CDR USN COMNAVAIRPAC SAN CA (USA)

(b) (3) (A), (b) (6)

Subject: Witness list

Gents,

Below is the list of our witnesses. Of note, the injured French family is being represented by the Bregman Law Group and all communications are going through their lawyer. **(b) (3) (A), (b) (6)** is from the French Consul office and has been helpful in making contact with the family, again through their lawyer.

(b) (3) (A), (b) (6)

French Witness POC's:

(b) (3) (A), (b) (6) (Deputy Consul – Los Angeles) **(b) (3) (A), (b) (6)**

(b) (3) (A), (b) (6) (Bregman Law Group) **(b) (3) (A), (b) (6)**

R.

(b) (3) (A), (b) (6)

CDR **(b) (3) (A), (b) (6)**

VFA-113 PXO

(b) (3) (A), (b) (6)

Daily Status NMC/PMC Report

Source: AMSRR Database Report Date: 7/31/2019

VFA-151															
Last message: 7/30/2019 from COMSTRKRGHTWINGPAC															
Unit	TMS	ASN	IR	DOR	DEP	YA/TD	MC	PMC	NMC	PMC	NMC	PMC	CTPH	SS	37
VFA-151	FA-18E	10	7	3	10	0	8	5	1	1	1	2	15.7	12	12
Totals:		10	7	3	10	0	8	5	1	1	1	2	15.7	12	12
		MC%	85.7		PMC%	71.4			Day Pct	15.7		Ngt Pct	0.0		

COMSTRKRGHTWINGPAC - VFA-151															
MODEX-BUNO	TMS	MC	PMC	RBA	DLE	MATCON	NMC	PMC	CBDEP	YA/TD	STATUS	LOCATION	EPD	PHARE	DET
400-168471	FA-18E	X	X	X	07/24/2019	PMC	0	0	X		A10	HOME		D00.4	
401-168480	FA-18E	X	X	X	07/24/2019	PMC	0	0	X		A10	HOME		A4.3	
Non-maintenance															
MCM															
402-168472	FA-18E				07/03/2019	NMC	1	0	X		A10	HOME		D00.4	
Maintenance															
BAR CATAPIAT															
403-168473	FA-18E				05/24/2019	PMC	0	0	X		D40	HOME		D00.4	
Non-maintenance															
FAIRING															
405-168475	FA-18E	X	X	X	05/20/2019	PMC	0	0	X		A10	HOME		D00.4	
406-168476	FA-18E	X	X	X	07/24/2019	PMC	0	0	X		A10	HOME		D00.4	
407-168477	FA-18E				07/24/2019	PMC	0	0	X		D40	HOME		D00.4	
410-168478	FA-18E	X	X	X	07/03/2019	PMC/RBA	0	2	X		A10	HOME		D00.4	
Maintenance															
BPUCE CONDUCTOR															
411-168479	FA-18E	X	X	X	05/20/2019	PMC	0	0	X		A10	HOME		D00.4	
412-168828	FA-18E				05/20/2019	PMC	0	0	X		D40	HOME		D00.4	
Maintenance															
FLAP WING															
RIVET BLIND															
WINDSCREEN															
CANOPY MOVING															
MAINFOLD PUL															
BLISSING SUFF															
RIVET BLIND															
PIN RIVET															
PIN RIVET															
RECEPTACLE															
SEAL															
BEARING															
BUTTON PLUG															
SOLE															
BUSHING															
SCREW MACHINE															
SEAL AL															
Totals:															
MC/PMC		1	8	5	8		1	2	10		0				

Night of 30 July 19

[illegible]

ON PERSONNEL PRESENT: 67

MEMS	EAC DD	28 DAY	282 Day	283 Day
DDM376	2-Aug-19	9-Aug-19	9-Aug-19	9-Aug-19
DDM664	2-Aug-19	20-Aug-19	23-Oct-19	30-Nov-19
DDM634	2-Aug-19	28-Jul-19	16-Oct-19	17-Nov-19

FLIR		
FRP571	430	1.5
FRP523		
FRP226	411	1.5
FRP113	400	
FRP133		1.5

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400	NOT INST
401	INSTALL
402	INSTALL
403	NOT INST
404	INSTALL
405	INSTALL
407	INSTALL
410	INSTALL

ARCHIVED TAF OF: 20190731 // FROM: 0 TO: 23 UTC
AIRPORTS REQUESTED: KNID

KNID 3023/3123 19015G22KT 9999 SCT280 510009 QNH2979INS WND 160V230 TEMPO
3023/3102 19020G27KT 9999 BKN280 BECMG 3102/3104 21007KT 9999 FEW280 500000
QNH2983INS WND VRB05KT AFT 3112 BECMG 3118/3120 19015G25KT 9999 SCT280 510005
QNH2985INS T22/3113Z T42/3123Z LAST NO S AFT 3105 NEXT 3115
KNID 3023/3123 19015G22KT 9999 SCT280 510009 QNH2979INS WND 160V230 TEMPO
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19015G25KT 9999 SCT280 510005 QNH2985INS T22/3113Z T42/3123Z LAST NO S AFT 3105
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21007KT 9999 BKN250 500000 QNH2986INS WND VRB05KT AFT 3112 BECMG 3118/3120
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 21007KT 9999 BKN250 500000 QNH2986INS WND VRB05KT AFT 3112 BECMG 3118/3120
 19015G25KT 9999 SCT280 510005 QNH2985INS T22/3113Z T42/3123Z LAST NO S AFT 3105
 NEXT 3115 0255
 KNID 3102/3123 26012G18KT 9999 SCT250 BKN280 510009 QNH2983INS BECMG 3103/3105
 21007KT 9999 BKN250 500000 QNH2986INS WND VRB05KT AFT 3112 BECMG 3118/3120
 19015G25KT 9999 SCT280 510005 QNH2985INS T22/3113Z T42/3123Z LAST NO S AFT 3105
 NEXT 3115 0255
 KNID 3115/0115 VRB05KT 9999 FEW250 QNH2985INS BECMG 3119/3121 21015G25KT 9999
 SCT250 510009 QNH2982INS BECMG 0103/0105 21007KT 9999 FEW250 500000 QNH2986INS
 WND VRB05KT AFT 0112 T41/3123Z T22/0113Z
 KNID 3115/0115 VRB05KT 9999 FEW250 QNH2985INS BECMG 3119/3121 21015G25KT 9999
 SCT250 510009 QNH2982INS BECMG 0103/0105 21007KT 9999 FEW250 500000 QNH2986INS
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 KNID 3115/0115 VRB05KT 9999 FEW250 QNH2985INS BECMG 3119/3121 21015G25KT 9999
 SCT250 510009 QNH2982INS BECMG 0103/0105 21007KT 9999 FEW250 500000 QNH2986INS
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 KNID 3115/0115 VRB05KT 9999 FEW250 QNH2985INS BECMG 3119/3121 21015G25KT 9999
 SCT250 510009 QNH2982INS BECMG 0103/0105 21007KT 9999 FEW250 500000 QNH2986INS
 WND VRB05KT AFT 0112 T41/3123Z T22/0113Z
 KNID 3115/0115 VRB05KT 9999 FEW250 QNH2985INS BECMG 3119/3121 21015G25KT 9999
 SCT250 510009 QNH2982INS BECMG 0103/0105 21007KT 9999 FEW250 500000 QNH2986INS
 WND VRB05KT AFT 0112 T41/3123Z T22/0113Z
 KNID 3115/0115 VRB05KT 9999 FEW250 QNH2985INS BECMG 3119/3121 21015G25KT 9999
 SCT250 510009 QNH2982INS BECMG 0103/0105 21007KT 9999 FEW250 500000 QNH2986INS
 WND VRB05KT AFT 0112 T41/3123Z T22/0113Z
 KNID 3123/0123 20014G22KT 9999 FEW250 510009 QNH2982INS WND 26012KT AFT 0103
 TEMPO 3123/0102 20020G28KT BECMG 0103/0105 21007KT 9999 SKC 500000 QNH2988INS
 WND VRB05KT AFT 0112 BECMG 0118/0120 20015G25KT 9999 FEW250 510009 QNH2990INS
 T22/0113Z T41/0122Z LAST NO S AFT 0105 NEXT 0115



Computation path of the sun for:

Inyo County, United States of America

31.Jul.2019 09:43 UTC-7 >|<

Solar data for the selected location

Dawn: 05:27:19
Sunrise: 05:55:30
Culmination: 12:56:29
Sunset: 19:56:59
Dusk: 20:25:05
Daylight duration: 14h1m29s
Distance [km]: 151.855.957
Altitude: 43.92°
Azimuth: 99.77°
Shadow length [m]: 1.04
at an object level [m]: 1

Geodata for the selected location

Height: 876m [Set Lat/Lon]
Lat: N 36°20'50.27" 36.34730°
Lng: W 117°31'17.76" -117.52160°
UTM: 11S 453196 4022597
TZ: America/Los_Angeles DST PDT

More solar data

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Contact

Help & API

The same for the Moon

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