

DAWG CORRIDOR COORDINATES

CADC Class E/G

POINT_ID	MGRS	Latitude	Longitude
1	11SQS3672715728	32° 39' 14" N	114° 28' 34" W
2	11SQS3691307921	32° 35' 0" N	114° 28' 34" W
3	11SQS3121307767	32° 35' 0" N	114° 32' 12" W
4	11SQS3302011139	32° 36' 48" N	114° 31' 0" W

CADC ROZ

POINT_ID	MGRS	Latitude	Longitude
A	11SQS3676315000	32° 38' 50" N	114° 28' 33" W
B	11SQS4000015000	32° 38' 48" N	114° 26' 29" W
C	11SQS4000010000	32° 36' 5" N	114° 26' 33" W
D	11SQS3688210000	32° 36' 8" N	114° 28' 33" W

Dawg ROZ

POINT_ID	MGRS	Latitude	Longitude
A	11SQS3688210000	32° 36' 8" N	114° 28' 33" W
B	11SQS3873410000	32° 36' 6" N	114° 27' 22" W
C	11SQR3920090273	32° 25' 26" N	114° 27' 22" W
D	11SQR3733390895	32° 25' 48" N	114° 28' 33" W

Dawg West

POINT_ID	MGRS	Latitude	Longitude
A	11SQR3733390895	32° 25' 48" N	114° 28' 33" W
B	11SQR5956983521	32° 21' 31" N	114° 14' 30" W
C	11SQR6156478916	32° 19' 0" N	114° 13' 18" W
D	11SQR3742586961	32° 23' 40" N	114° 28' 33" W

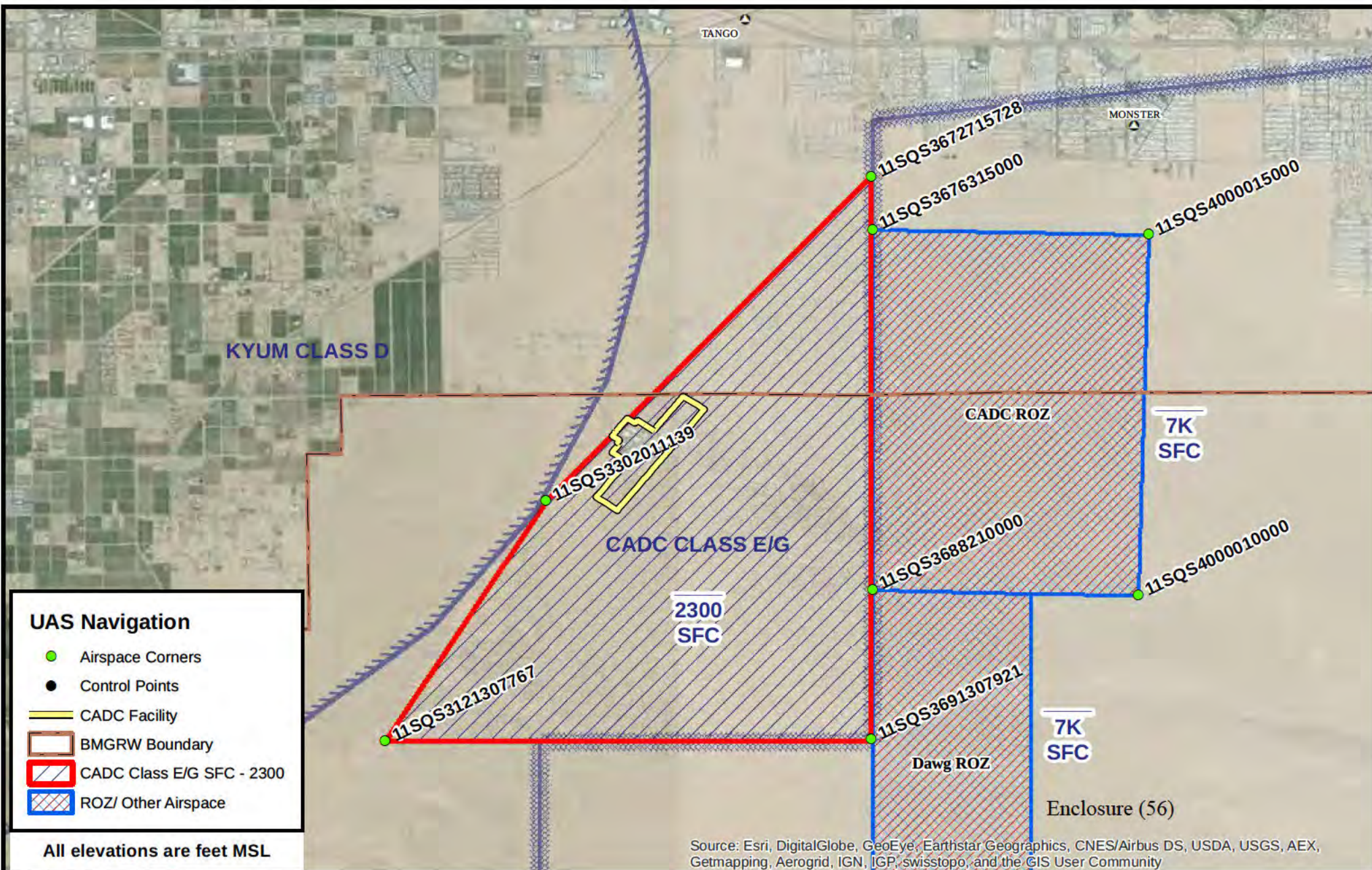
Dawg East

POINT_ID	MGRS	Latitude	Longitude
A	11SQR5956983521	32° 21' 31" N	114° 14' 30" W
B	12STA6222558075	32° 8' 2" N	113° 31' 14" W
C	12STA6312153738	32° 5' 42" N	113° 30' 36" W
D	11SQR6156478916	32° 19' 0" N	114° 13' 18" W

Project ID: 16-119

Date: 13JUL16

Enclosure (56)



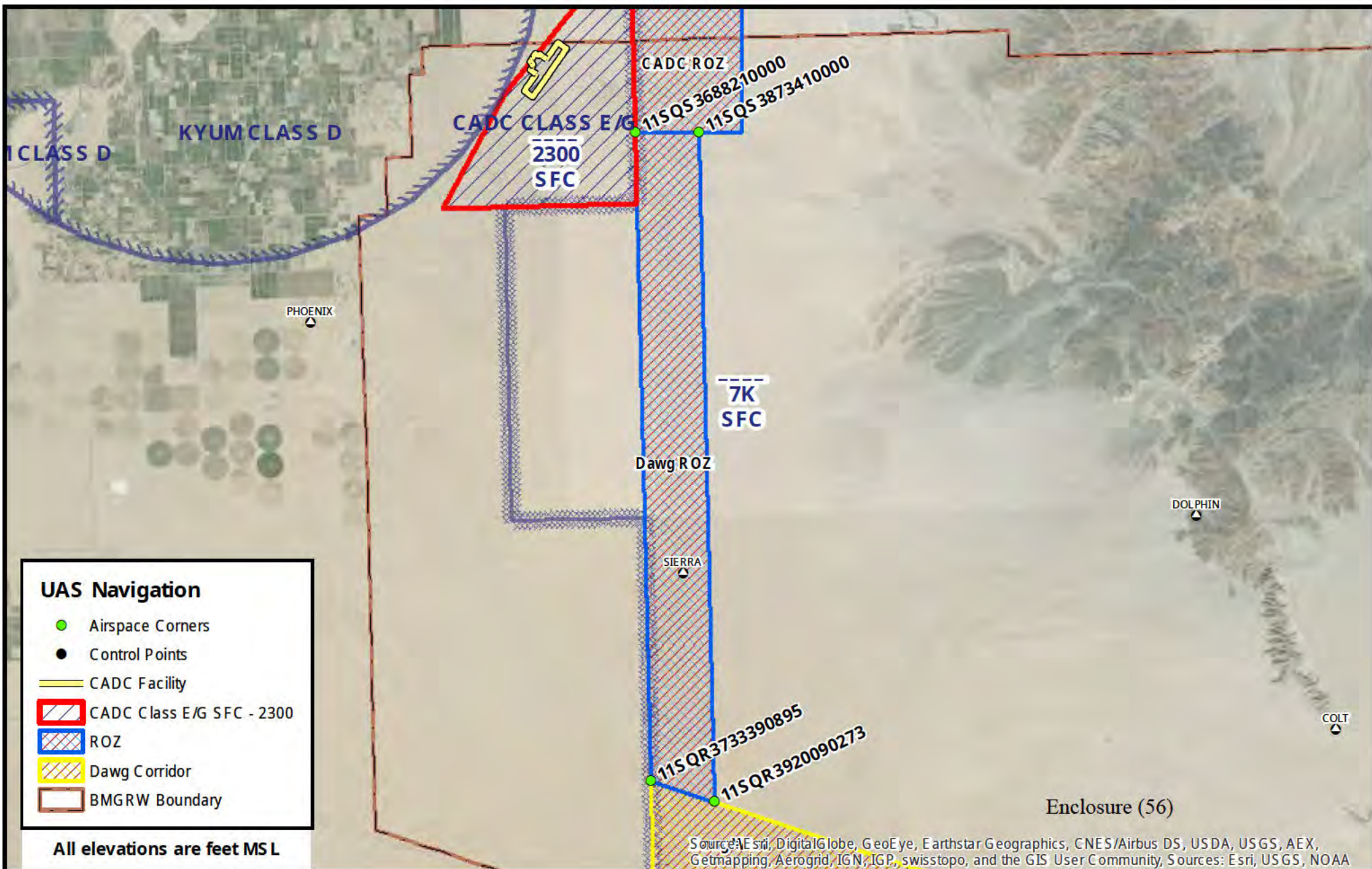
CADC ROZ MARINE CORPS AIR STATION YUMA

0 1 2 Nautical Miles

Although every effort has been made to ensure the accuracy of the information, errors and conditions originating from physical sources to develop the database may be reflected in the data supplied. The user must be aware of data conditions and ultimately bear the responsibility for the appropriate use of the information with respect to possible errors original map scale, collection methodology, currency of the data, and other conditions specific to certain data. This information does not depict all possible resources. Field verification of all data is required for site-specific projects. This information is deemed reliable, but not guaranteed.



16-119
13 July 2016



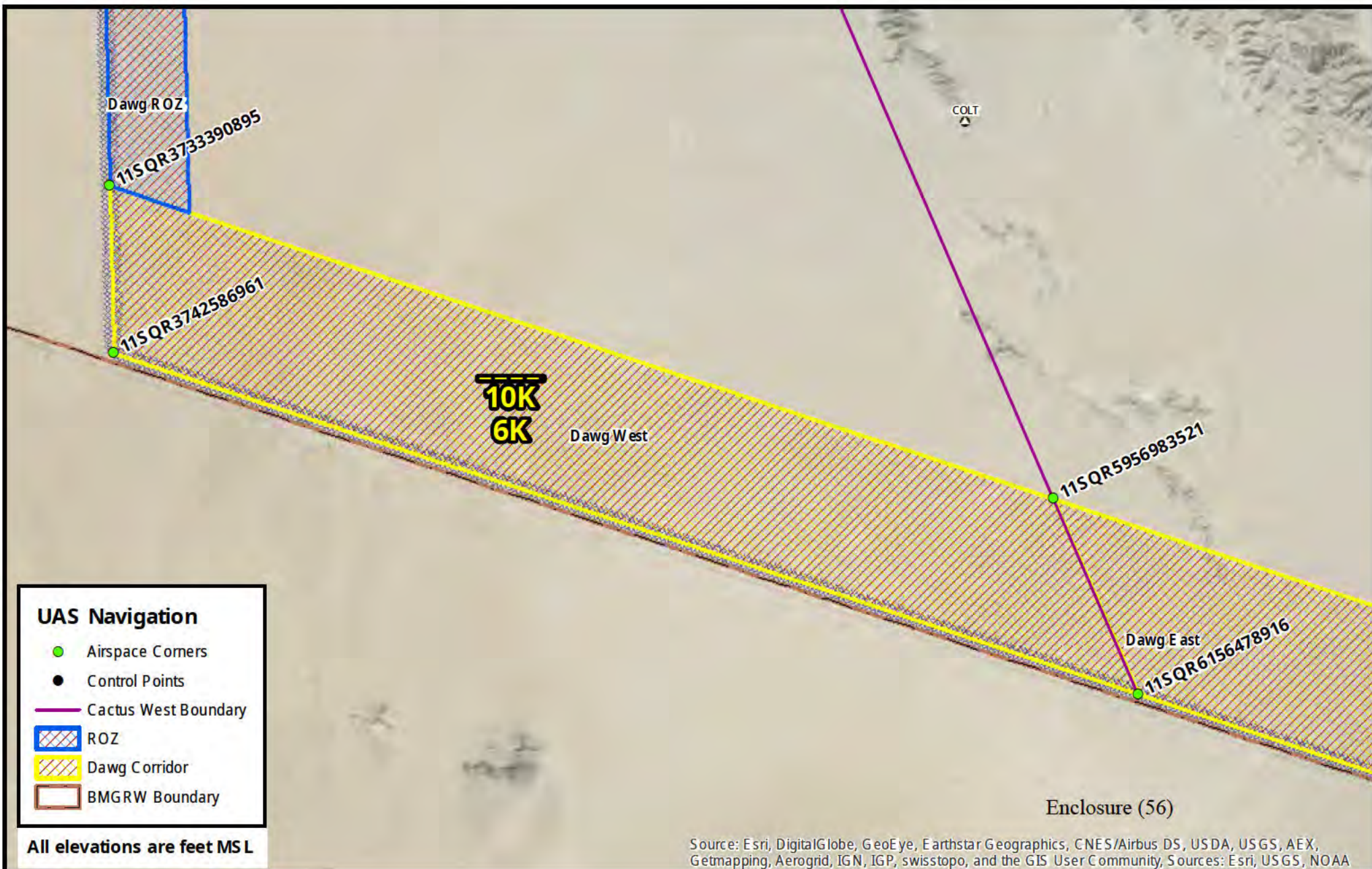
Dawg ROZ MARINE CORPS AIR STATION YUMA

0 2.5 5 Nautical Miles

Although every effort has been made to ensure the accuracy of the information, errors and conditions originating from physical sources to develop the database may be reflected in the data supplied. The user must be aware of data conditions and ultimately bear the responsibility for the appropriate use of the information with respect to possible errors original map scale, collection methodology, currency of the data, and other conditions specific to certain data. This information does not depict all possible resources. Field verification of all data is required for site-specific projects. This information is deemed reliable, but not guaranteed.



16-119
13 July 2016

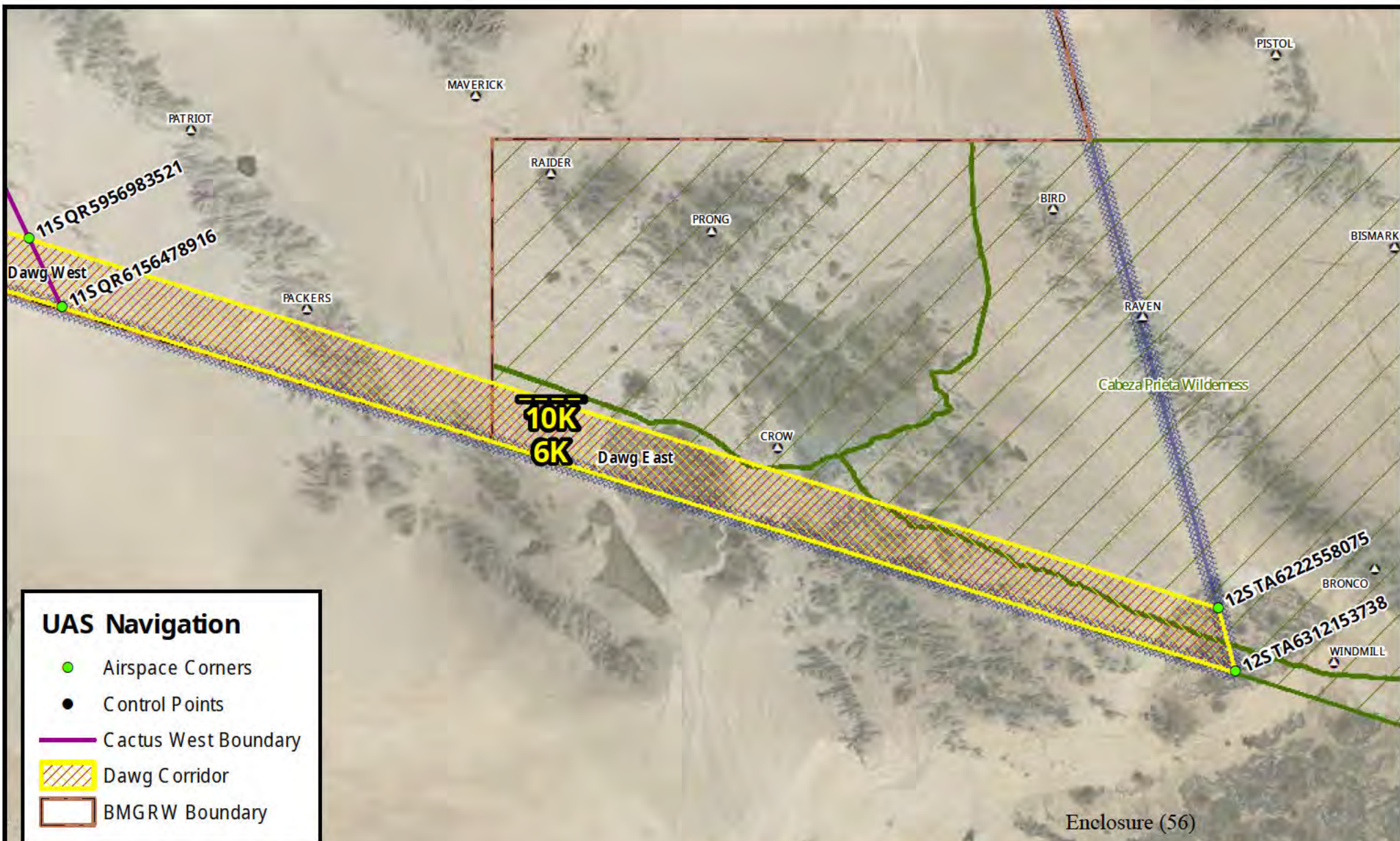


0 2 4 Nautical Miles

Although every effort has been made to ensure the accuracy of the information, errors and conditions originating from physical sources to develop the database may be reflected in the data supplied. The user must be aware of data conditions and ultimately bear the responsibility for the appropriate use of the information with respect to possible errors original map scale, collection methodology, currency of the data, and other conditions specific to certain data. This information does not depict all possible resources. Field verification of all data is required for site-specific projects. This information is deemed reliable, but not guaranteed.



16-119
13 July 2016



UAS Navigation

- Airspace Corners
- Control Points
- Cactus West Boundary
- Dawg Corridor
- BMGRW Boundary

All elevations are feet MSL

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Sources: Esri, USGS, NOAA



Dawg East Corridor MARINE CORPS AIR STATION YUMA

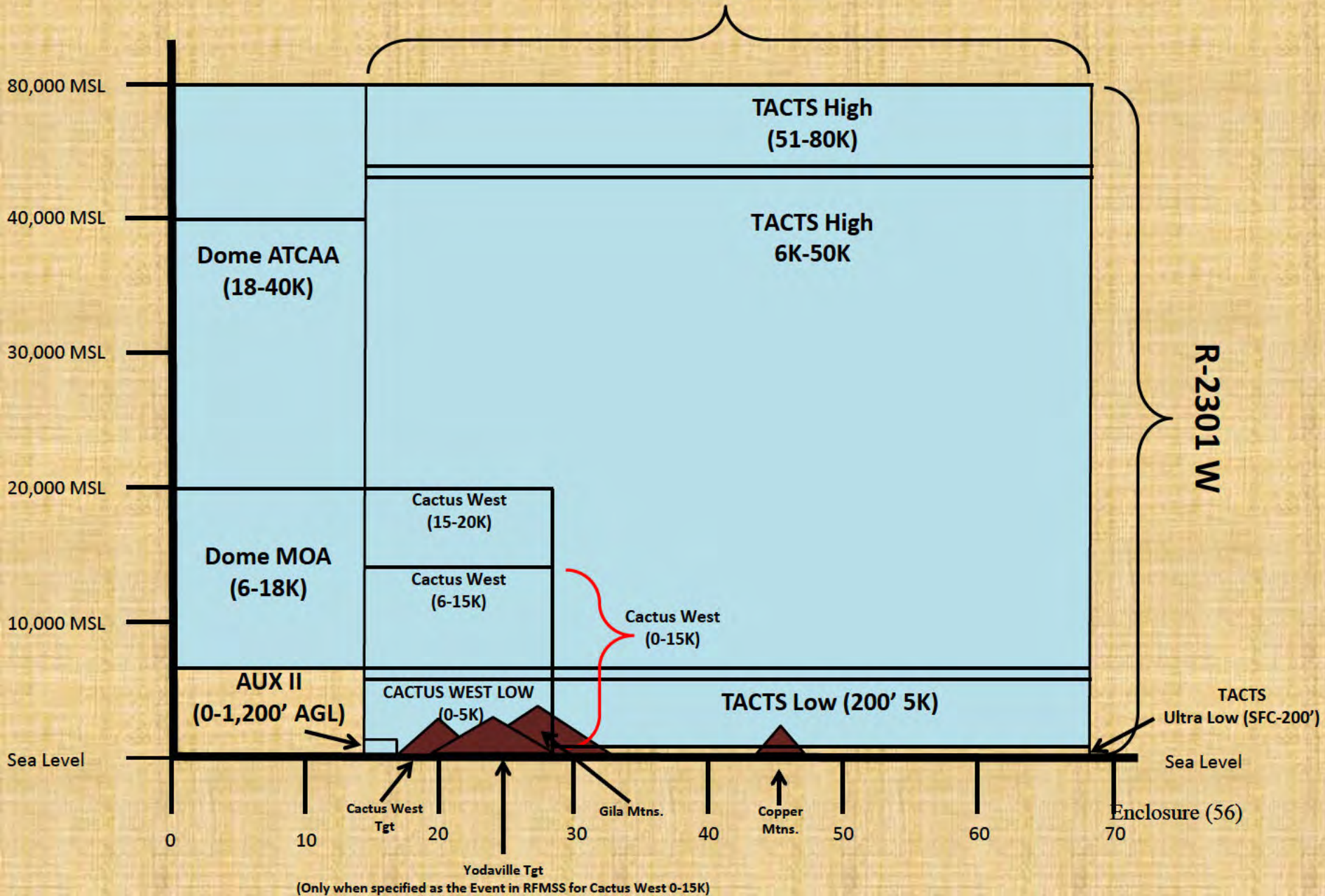
0 6 12 Nautical Miles

Although every effort has been made to ensure the accuracy of the information, errors and conditions originating from physical sources to develop the database may be reflected in the data supplied. The user must be aware of data conditions and ultimately bear the responsibility for the appropriate use of the information with respect to possible errors original map scale, collection methodology, currency of the data, and other conditions specific to certain data. This information does not depict all possible resources. Field verification of all data is required for site-specific projects. This information is deemed reliable, but not guaranteed.



16-119
13 July 2016

R-2301 W



ODO Logbook 8 June

08 JUN 22

CO

XO

OPSO

ODO

1530 I, [REDACTED] HAVE ASSUMED THE DUTIES OF VMM-364 ODO

0832 STU/IZ TAXIING OB. DELAYED FOR WEATHER

0834 STU W/O KNEG

0840 STIZ W/O KNEG

1153 I, [REDACTED] HAVE BEEN PROPERLY RELIEVED BY CAPT HARKIN

1200 I, [REDACTED] HAVE ASSUMED THE DUTIES OF VMM-364

ODO



Enclosure (58)

Imperial, CA Weather History

Source: <https://www.wunderground.com/history/daily/us/ca/el-centro/KIPL/date/2022-6-8>

 **110°** IMPERIAL COUNTY STATION | [CHANGE](#) 

TODAY

HOURLY

10-DAY

CALENDAR

HISTORY

WUNDERMAP

Daily

Weekly

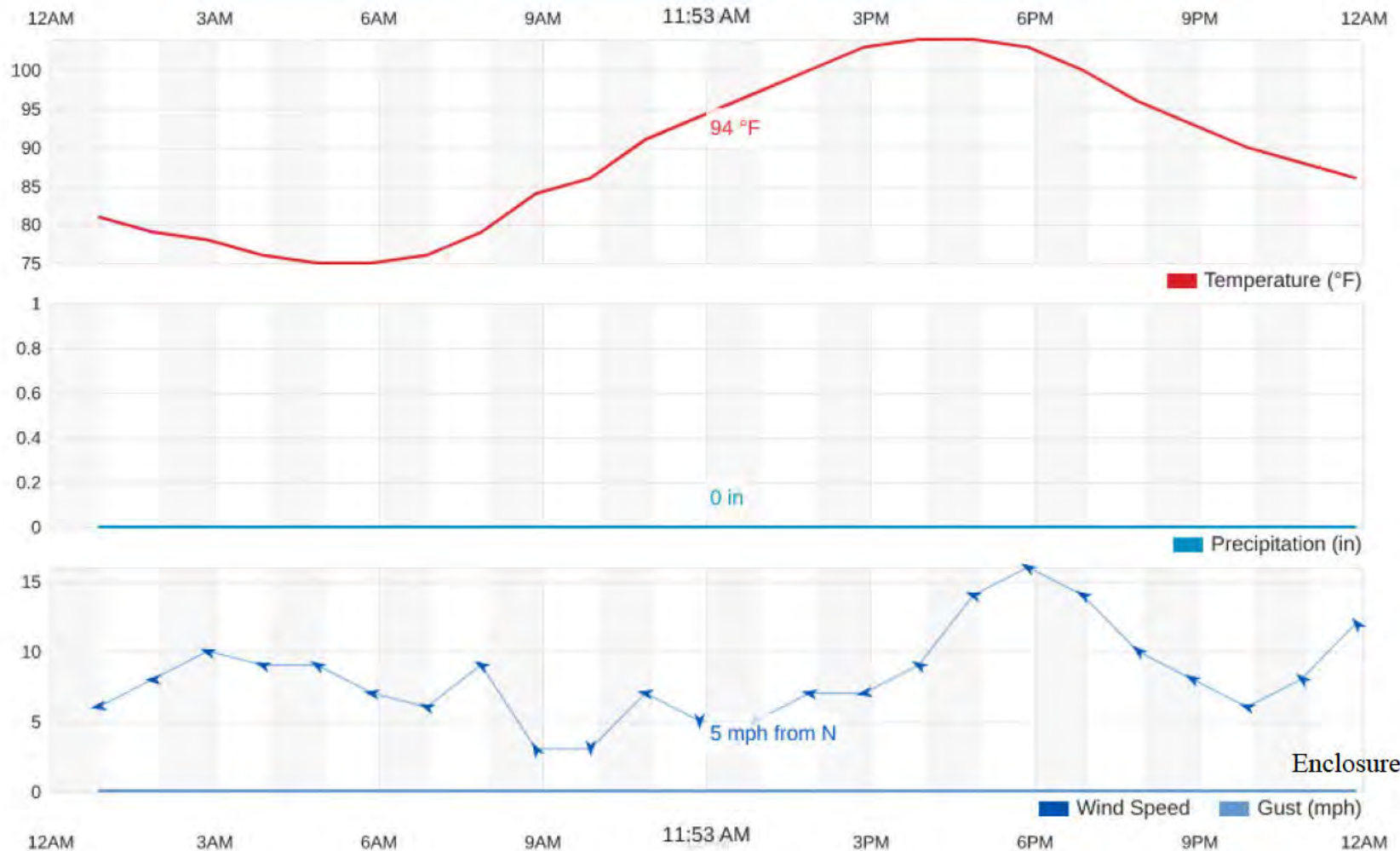
Monthly

June

8

2022

View

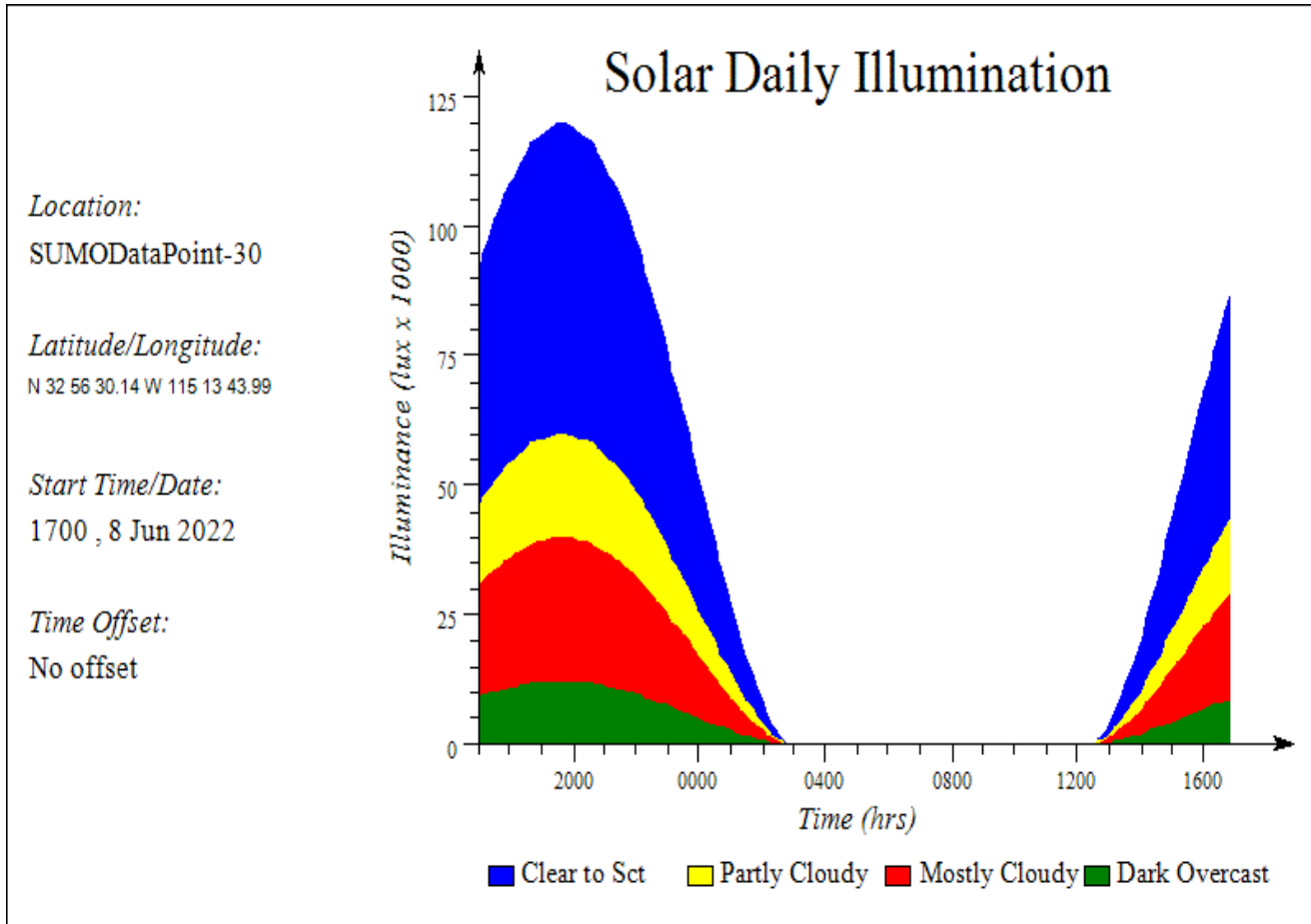


Enclosure (59)

SUMO

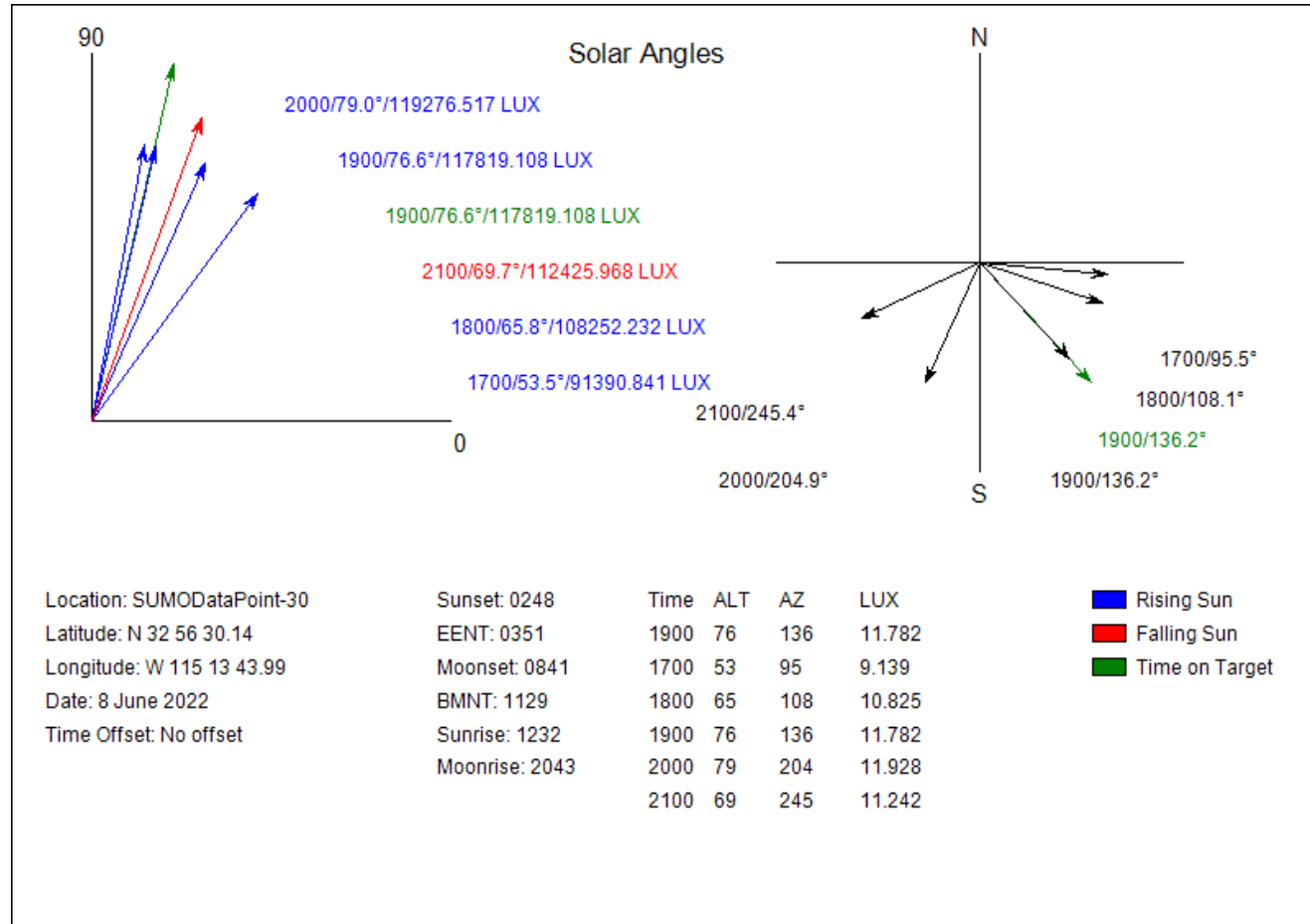
Location: Inky Barley (11S PS 65612 46221)
Date/Time: 8 Jun 2022

SDI



Enclosure (60)

SEAA



SLSS

Solar / Lunar Site Summary Table

Location: SUMODataPoint-30

Latitude: N 32 56 30.14

Longitude: W 115 13 43.99

Start Date: 6/8/2022

Offset from Universal Time (UTC): No offset

Solar Data :

Sunrise:	1232
Sunset:	0248
Begin Civil Twilight:	1204
End Civil Twilight:	0316
Begin Nautical Twilight:	1129
End Nautical Twilight:	0351
Longitudinal Passage Time:	1940
Longitudinal Passage Altitude:	80.0
Hours of Daylight:	1416

Lunar Data :

Moonrise:	2043
Moonset:	0841
Longitudinal Passage Time:	0216
Longitudinal Passage Altitude:	63.6
% Illumination	58



84 RADES Data Reduction

2022-06-08 (NSC)

21 JUN 2022

DR-122

Requested by:

[REDACTED], CIV USN

Mishap Investigations Directorate, Naval Safety Command

Provided By: 84th Radar Evaluation Squadron/RESA

Please refer any questions to:

[REDACTED]

[REDACTED]

[REDACTED]

Enclosure (61)

Controlled by: 84 RADES/RES

[REDACTED]

POC: Flight Chief, 84RADES.Workflow@us.af.mil

[REDACTED]



84th Radar Evaluation Squadron (RADES) Analysis (RESA)



DOD/DHS LONG RANGE RADAR JOINT PROGRAM OFFICE
HEADQUARTERS AIR COMBAT COMMAND
205 DODD BLVD, SUITE 101
JOINT BASE LANGLEY-EUSTIS, VA 23665



March 13, 2014

MEMORANDUM FOR: HQ ACC/A6XP (FOIA)
180 Benedict Avenue, Suite 210
Joint Base Langley-Eustis VA 23665-1993

FROM: DoD/DHS Long Range Radar Joint Program Office (LRR JPO)

SUBJECT: Processing of FOIA Radar Data Requests

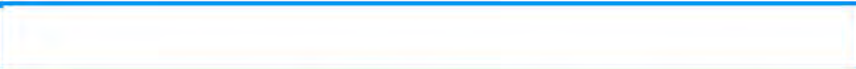
1. Request any FOIA requests for radar data be sent to this office for possible inter-Departmental staffing. Currently, the 84th RADES at Hill AFB, UT directly receives FOIA requests for radar data, however, the radar data is owned jointly by the Department of Defense, the Department of Homeland Security and the Federal Aviation Administration. FOIA requests for radar data will follow these rules and assumptions.

- 84th RADES is never the owner of the radar data therefore they are not authorized to release it or process FOIA requests for radar data.
- FOIA requests are not required to be processed if a record must be created. All radar data requests require a trained radar technician to perform a data extraction and parsing of radar data to create a usable product. (IAW DoD 5400.7-R, DoD Freedom of Information Act Program Section C1.4.3.3: "There is no obligation to create, compile or obtain a record to satisfy a FOIA request.")
- Radar data requests from foreign countries or foreign citizens will not be provided based on the sensitive military nature of the radar data and DHS's law enforcement mission.

2. If you have any questions, please feel free to contact

Cc:
DHS LRR
FAA NDP
HQ ACC/
84th RADES/ACC
HQ ACC/A3CI

Enclosure (61)



84th Radar Evaluation Squadron (RADES) Analysis (RESA)

Release of all provided data pursuant to the following:

AFI 91-204 (27Apr18) Safety Investigations and Hazard Reporting; p 4.3, 4.3.1, 4.3.2, 4.3.3

4.3. Identifying Privileged Safety Information. Privileged safety information refers to information that is exempt by case law from disclosure outside the DoD Safety Community. The DoD Safety Community consists of DoD personnel and certain DoD contractors with a specific need to know particular information exclusively for the prevention of DoD mishaps. The military safety privilege is judicially recognized and protects the investigative process and promises of confidentiality. The AF treats this information as limited use/limited access. Safety privilege assures commanders obtain critical information expeditiously during a safety investigation and ensures that completed final reports are protected, thereby proactively promoting safety, and preserving combat readiness and mission accomplishment. Privileged safety information includes:

4.3.1. Analysis, findings, conclusions, causes, recommendations, other findings and recommendations of significance, and the deliberative process of safety investigators. Diagrams and exhibits are privileged if they contain information which depicts the analysis of safety investigators. This includes draft versions of the above material and notes (see paragraph 4.2 for exceptions).

4.3.2. Information given to safety investigators pursuant to a promise of confidentiality and any information derived from that information to include direct or indirect references to that information (see paragraph 4.5 for promise of confidentiality).

4.3.3. Computer-generated animations, simulations, or simulator reenactments in which safety investigator analysis or confidential witness statements are incorporated. Animations made exclusively from recorder data (including Military Flight Operations Quality Assurance data) are not privileged. Although not privileged, actual intra-cockpit voice communication has legal protection as private communication and any request for access must be coordinated through legal channels. Requests to any safety office for intra-cockpit voice communications should be directed to the AFSEC/JA.

AFI 91-204 (27Apr18) Safety Investigations and Hazard Reporting; p 4.8, 4.8.4.3

4.8. Authorized Use and Release of Privileged Safety Reports and Information. In order to ensure courts honor the assertion of privilege, and DoD personnel maintain confidence in the limited use of privileged safety information, the rules described in this paragraph must be followed meticulously.

Enclosure (61)

4.8.4.3. Historical Safety Reports. The AFSEC/CC or AFSEC/CV may release the findings portion only (not analysis, conclusions, recommendations, or witness statements, etc.) of a Safety Board, contained in historical safety reports prepared in accordance with DoDI 6055.07 (or its predecessors), provided no national defense or safety interest exists.





84th Radar Evaluation Squadron (RADES) Analysis (RESA)

Release of all provided data pursuant to the following (cont):

AFI 91-204 (27Apr18) Safety Investigations and Hazard Reporting; p 6.7.2.1, 6.7.2.1, 6.7.3.1.1

6.7.2.1. Technical experts supporting an investigation are bound to follow Safety Investigation Board President and the Single Investigating Officer guidance while directly working and serving the Safety Investigation Board. This applies to DoD military and civilian personnel as well as contractor representatives. The Safety Investigation Board President or Single Investigating Officer should involve technical experts as early in the investigation as possible, ideally at the start of the investigation with the Interim Safety Board hand-off brief. The Safety Investigation Board President or Single Investigating Officer should also include technical experts in deliberations to formulate valid findings and viable recommendations.

6.7.2.2. Upon completion of their investigations, technical experts must provide a written report detailing results of their work.

6.7.2.3. Safety Investigation Board Presidents and Single Investigating Officers must ensure a **Non-Disclosure Agreement-Safety Investigation or Non-Disclosure Agreement – Contractor Reps Serving as Tech Experts to SIBs** (as applicable) on protection of privileged data is prepared and endorsed by all non-AF Safety Investigation Board personnel (e.g. contractors, National Transportation Safety Board) offered a promise of confidentiality or provided access to privileged safety information. Use the templates located in the AF Safety Automated System Pubs & Refs section

AFI 91-204 (27Apr18) Safety Investigations and Hazard Reporting; p 6.10.10, 6.14

6.10.10. Do not include people's names, call signs, DoD Human Factors Analysis and Classification System codes, names of AF bases or companies in the findings. Use terms such as "the mishap aircraft," "the mishap vehicle operator," "the mishap pilot," "the mishap maintainer," etc.

6.14. **Releasing Investigative Information During an Active Safety Investigation.** It is AF policy to keep the public informed of AF events and safety investigations and to release non-privileged safety information, both favorable and unfavorable. AF policy complies with the requirements of Title 10, United States Code, Section 2254(b) regarding the public disclosure of certain non-privileged aircraft accident investigation information. The Safety Investigation Board President approves the release of all information (including electronic/digital media, photographs, etc.) from the Safety Investigation Board to the Accident Investigation Board or other legal investigation, but will not communicate directly with the media or other members of the public. The release of non-privileged safety information to news media, relatives, and other agencies is through the Accident Investigation Board President, Survivor Assistance Program point of contact, Family Liaison Officer, or Public Affairs representative as appropriate.



84th Radar Evaluation Squadron (RADES) Analysis (RESA)

Release of all provided data pursuant to the following (cont):

AFI 91-204 (27Apr18) Safety Investigations and Hazard Reporting; p 9.2.7

9.2.7. AF/SE is the releasing authority for Class A Memorandums of Final Evaluation. AFSEC/CV is the releasing authority for Class B Memorandums of Final Evaluation. The AF Safety Center will release the Memorandum of Final Evaluation via the Air Force Safety Automated System. When transmitted, the Memorandum of Final Evaluation becomes the official AF position on findings, recommendations, and DoD Human Factors Analysis and Classification System codes.

AF Man 91-223 (14Sep18) Aviation Safety Investigations and Reports; p 6.5.4.3, 6.5.5, 6.5.5.4.1

6.5.4.3. The CA approves the release of any photographs or videos to the public IAW AFI 91-204.

6.5.5. Recorded Data. Collect and analyze data from on-board and off-board sources. Numerous data sources and collection devices are available for use in investigations including Crash Survivable Flight Data Recorders, Cockpit Voice Recorders (CVR), Flight Control Seat Data Recorders, Head Up Displays, Advanced Data Transfer Cartridges, Automatic Ground Collision Avoidance System Log files, and Personal Computer Debriefing System files. Additionally, secure data recorded by other off-board recording systems such as wingman CVRs. Contact AFSEC Technical Assistance prior to downloading data recorders.

6.5.5.4.1. AFSEC/MAAF will be the primary source for animations intended to represent the actual mishap sequence. If AFSEC/MAAF cannot produce a specific mishap animation, or if additional animations are produced, SIBs will submit externally-generated mishap animations to the AFSEC/MAAF for review. (T-1) AFSEC/MAAF will analyze the externally-generated animation for any shortfalls, inadequacies, or inaccuracies that may impact accurate SIB deliberations or CA conclusions. If it is not used, they will not enter the animation into the formal report Tabs. (T-1)

All animation products must be appropriately marked to indicate whether or not they are privileged. (T-1)



84th Radar Evaluation Squadron (RADES) Analysis (RESA)

Release of all provided data pursuant to the following (cont):

DoDI 6055.07 (06Jun11) Mishap Notification, Investigation, Reporting, and Record Keeping;

Encl 4 para 4.b.(2), Enclosure 5 para 2.b.(4), Encl 5 para 4.b, Encl 5 para 4.e

Encl 4 p 4. AVIATION SAFETY INVESTIGATIONS INVOLVING CIVIL AND MILITARY AIRCRAFT

b. Mishaps Involving Only DoD Aircraft

(2) In all other mishaps involving only military aircraft, the DoD Components shall provide the Department of Transportation or the NTSB information determined by the DoD Components as contributing to the promotion of air safety. Privileged safety information shall be protected as required by Enclosure 5.

Encl 5 p 2. IDENTIFYING PRIVILEGED SAFETY INFORMATION. DoD Components protect privileged safety information to ensure commanders quickly obtain accurate mishap information. For a safety investigation, privileged safety information includes:

b. Products of deliberative processes of safety investigators, including:

(4) Photographs, films, and videotapes that are staged, reconstructed, or simulated reenactments of possible or probable scenarios developed by or for the analysis of the safety investigator. However, photographs depicting a measuring device or object contrasted against mishap evidence for the sole purpose of demonstrating the size or scale of the evidence are not considered privileged safety information and may be released.

Encl 5 p 4. USE, SHARING, AND RELEASE OF SAFETY INFORMATION

e. Privileged safety information that has been sanitized shall no longer be treated as privileged. Only a DoD Component safety center is authorized to sanitize and release a privileged safety report.

(1) To sanitize a document, remove identifying information including:

- (a) The date and location of the mishap.
 - (b) Materiel identification number.
 - (c) Names, social security numbers, and other personal identifying information of participants, witnesses, and investigators.
 - (d) Information given to a safety investigator pursuant to a promise of confidentiality and any information derived from that information or direct or indirect references to that information.
 - (e) Any other detail that directly, indirectly, or in aggregate identifies the mishap or any individual who has given information pursuant to a promise of confidentiality.
- (2) Some mishaps, due to widespread publicity or other unique circumstances, cannot be adequately sanitized. Under such circumstances, removal of this information may be inadequate since the identity of the mishap is disclosed by the unique mishap sequence. This information is not sanitized and shall not be released.

(3) When privileged safety information is sanitized, the findings, conclusions, causes, recommendations, opinions, analyses, and other indications of the deliberative processes of safety investigators, safety investigation boards, endorsers, and reviewers are no longer considered privileged.

Enclosure (61)



84 RADES Data Reduction: 2022-06-03_NSC (DR-120)



- The .CSV data set consists of the following radars:
 - QRW - Mt. Laguna, California, ARSR-4
 - NYL - Yuma MCAS, California, ASR-11 DOD



84 RADES Data Reduction: 2022-06-08 (NSC), 1900z-1930z





84 RADES Data Reduction: 2022-06-08 (NSC), 1900z-1903z



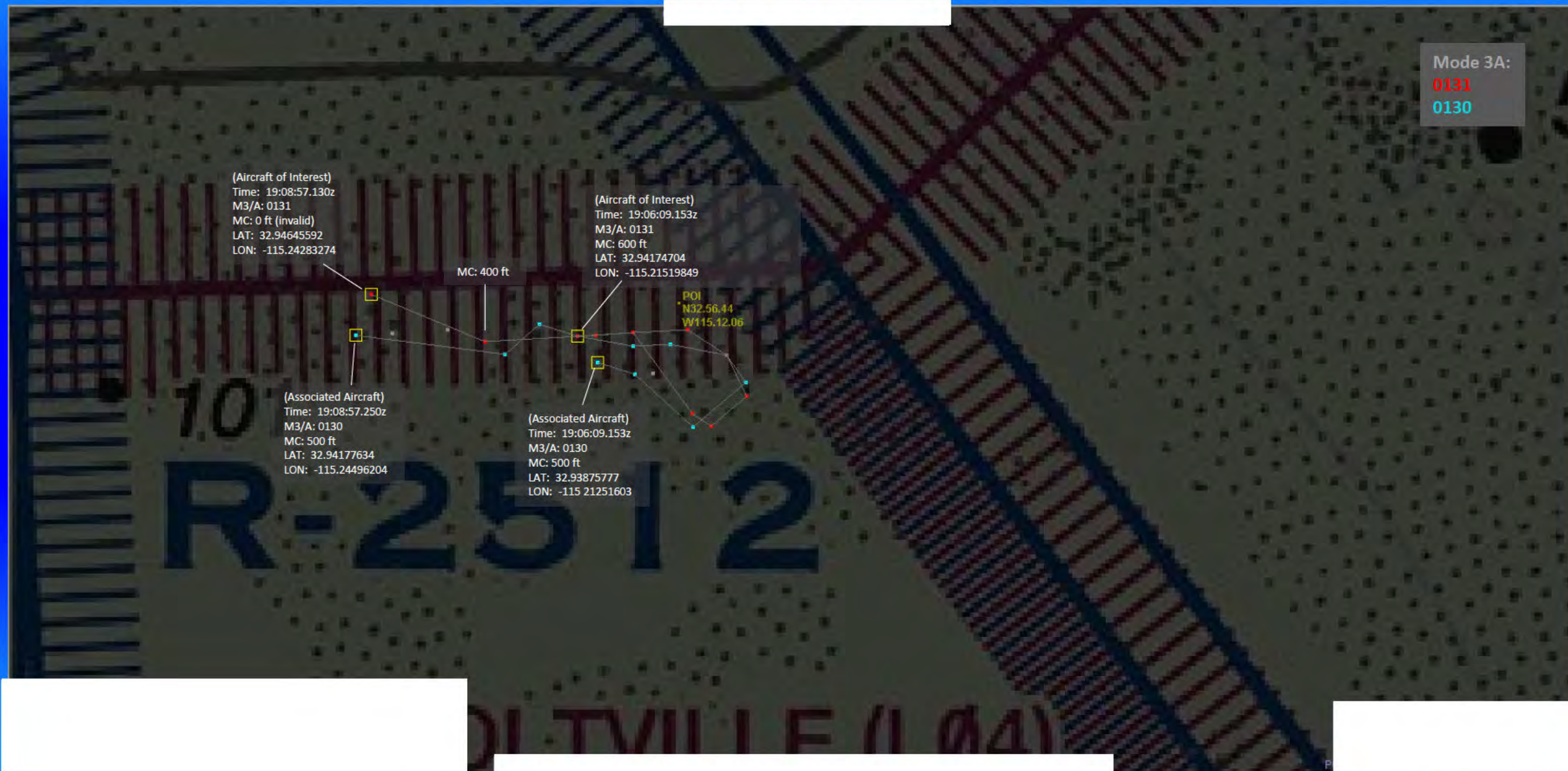


84 RADES Data Reduction: 2022-06-08 (NSC), 1903z-1906z





84 RADES Data Reduction: 2022-06-08 (NSC), 1906z-1909z





84 RADES Data Reduction: 2022-06-08 (NSC), 1909z-1912z





Downloaded from <http://ajphaphysoc.org/> at University of California, San Diego on November 10, 2014





84 RADES Data Reduction: 2022-06-08 (NSC), 1915z-1918z





84 RADES Data Reduction: 2022-06-08 (NSC), 1918z-1921z





84 RADES Data Reduction: 2022-06-08 (NSC), 1921z-1924z





84 RADES Data Reduction: 2022-06-08 (NSC), 1924z-1927z





84 RADES Data Reduction: 2022-06-08 (NSC), 1927z-1930z



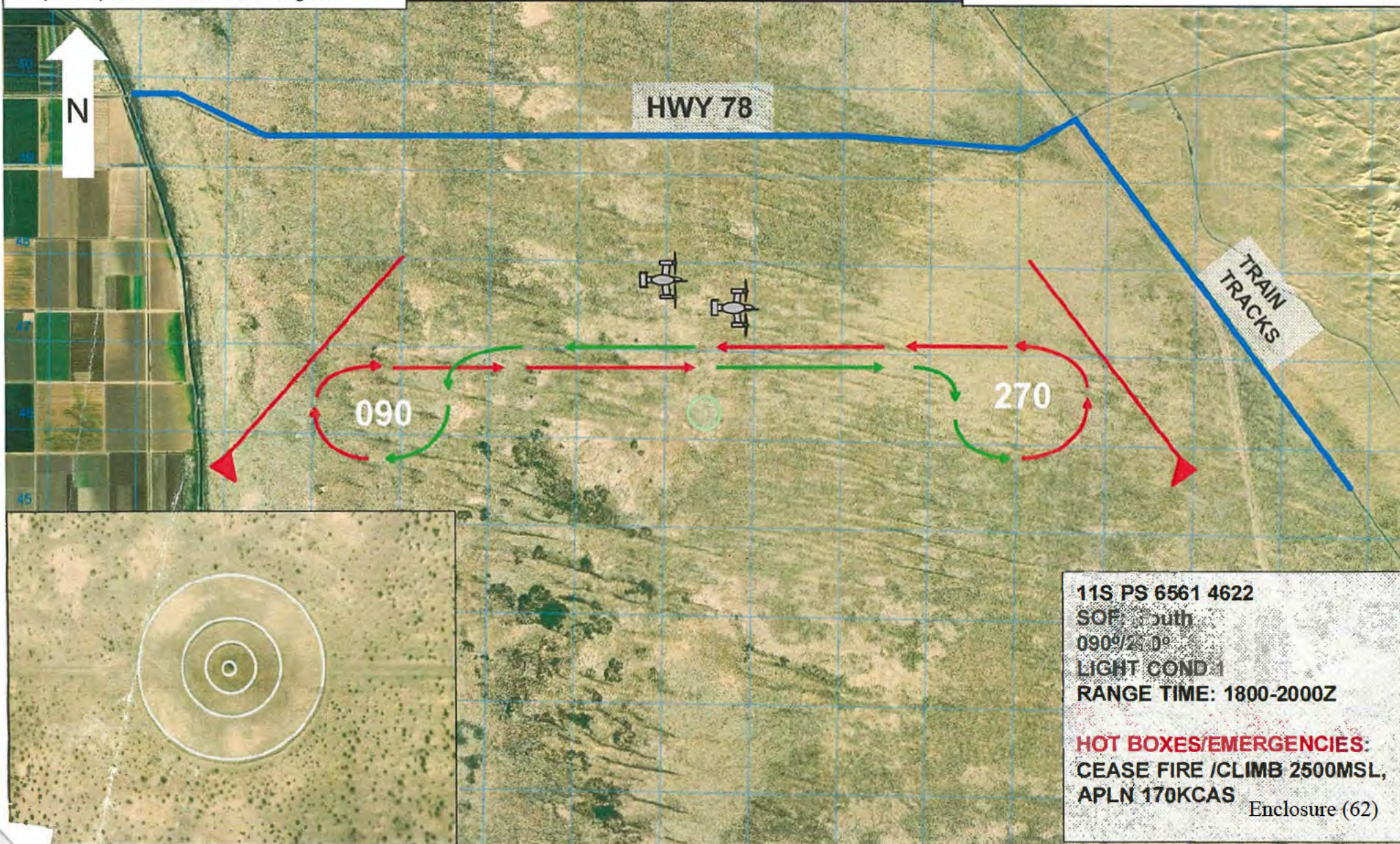
POC:

- Contact "YUMA RANGE" on **276.0/274.0** for clearance into restricted area (R2512)
- Check out with "YUMA RANGE" w/ utilization information
- Pilots **must** conduct a clearing pass prior to commencing live fire

TGT-68 Inky Barley

Common Frequency: 264.7

Line #	Alt (ft AGL)	Nacelle
1	300	60
2	200	80
3	App 50 ft to W/O	
4	500	170 KCAS



11S PS 6561 4622
 SOP: South
 090°/270°
 LIGHT COND 1
 RANGE TIME: 1800-2000Z

HOT BOXES/EMERGENCIES:
 CEASE FIRE /CLIMB 2500MSL,
 APLN 170KCAS

Enclosure (62)

Report: Data Explorer - Aircraft Related, Track#=1474, [0131]

File: C:\Documents and Settings\Administrator\Desktop\INSTANT\08JUN22 ANOMOLY_08JUN22 ANOMOLY, RNGW\08JUN22.Instant 08JUN22.Instant

Date: 14:57 Wednesday, June 15, 2022

Report: Data Explorer - Aircraft Related, Track#=1474, [0131] Jun 08 2022

Time	Sensor	Aid	Beacon Mode2	Type	Heading	Speed	Mode_C	UNC_Mode_C
19:06:02	NJK		0131	95.88	089	005	006	
19:06:06	NJK		0131	95.88	090	005	006	
19:06:11	NJK		0131	95.88	090	005	006	
19:06:16	NJK		0131	97.29	089	005	006	
19:06:21	NJK		0131	97.29	088	005	006	
19:06:26	NJK		0131	112.8	083	005	006	
19:06:31	NJK		0131	149.4	068	005	006	
19:06:36	NJK		0131	128.3	078	005	006	
19:06:41	NJK		0131	132.5	086	005	006	
19:06:46	NJK		0131	131.1	083	005	006	
19:06:51	NJK		0131	133.9	087	005	006	
19:06:56	NJK		0131	107.1	106	005	006	
19:07:01	NJK		0131	102.9	084	005		
19:07:06	NJK		0131	53.58	077	005	006	
19:07:11	NJK		0131	2.82	118	005	006	
19:07:16	NJK		0131	336.9	122	005	006	
19:07:21	NJK		0131	313.0	116	005	006	
19:07:26	NJK		0131	283.4	118	004	005	
19:07:31	NJK		0131	266.4	100	004	005	
19:07:36	NJK		0131	259.4	093	004	005	
19:07:40	NJK		0131	260.8	092	004	005	
19:07:45	NJK		0131	272.1	098	004	005	
19:07:50	NJK		0131	269.3	083	004	005	
19:07:55	NJK		0131	273.5	091	004	005	
19:08:00	NJK		0131	273.5	091	005	006	
19:08:05	NJK		0131	279.1	095	005	006	
19:08:10	NJK		0131	274.9	093	005	006	
19:08:15	NJK		0131	273.5	091	005	006	
19:08:20	NJK		0131	273.5	091	005		
19:08:26	NJK		0131	273.5	091	003	004	
19:08:27	NJK		0131	273.5	091	003-C	004-C	
19:08:30	NJK		0131	272.1	091	004	005	
19:08:35	NJK		0131	272.1	091	004	005	
19:08:40	NJK		0131	274.9	094	004		
19:08:46	NJK		0131	274.9	094	004-C	005-C	
19:08:47	NJK		0131	274.9	094	004-C	005-C	
19:08:50	NJK		0131	273.5	092	004	005	
19:08:56	NJK		0131	273.5	092	004-C	005-C	
19:08:56	NJK		0131	273.5	092	004-C	005-C	
19:09:00	NJK		0131	272.1	092	004	005	

Report: Data Explorer - Aircraft Related, Track#=1474, [0131]

File: C:\Documents and Settings\Administrator\Desktop\INSTANT\08JUN22 ANOMOLY_08JUN22 ANOMOLY,
RNGW\08JUN22.Instant 08JUN22.Instant

Date: 14:57 Wednesday, June 15, 2022

Report: Data Explorer - Aircraft Related, Track#=1474, [0131] Jun 08 2022

Time	Sensor	Aid	Beacon Mode2	Type	Heading	Speed	Mode_C	UNC_Mode_C
19:09:05	NJK		0131	272.1	092	004	005	
19:09:10	NJK		0131	270.7	092	004	005	
19:09:15	NJK		0131	266.4	091	004	005	
19:09:19	NJK		0131	248.1	090	004	005	
19:09:24	NJK		0131	225.6	082	004	005	
19:09:29	NJK		0131	229.8	095	004	005	
19:09:34	NJK		0131	225.6	082	004	005	
19:09:39	NJK		0131	245.3	088	005	006	
19:09:44	NJK		0131	265.0	077	005	006	
19:09:49	NJK		0131	294.6	088	005	006	
19:09:54	NJK		0131	315.8	093	005	006	
19:09:59	NJK		0131	334.1	098	005		
19:10:04	NJK		0131	358.1	127	004	005	
19:10:09	NJK		0131	14.10	107	004	005	
19:10:14	NJK		0131	46.53	110	004	005	
19:10:19	NJK		0131	53.58	081	004	005	
19:10:24	NJK		0131	76.14	088	004	005	
19:10:29	NJK		0131	107.1	082	005	006	
19:10:34	NJK		0131	94.47	092	005	006	
19:10:39	NJK		0131	98.70	082	004	005	
19:10:44	NJK		0131	101.5	080	004	005	
19:10:49	NJK		0131	101.5	081	004	005	
19:10:54	NJK		0131	101.5	082	004	005	
19:10:59	NJK		0131	101.5	084	004	005	
19:11:04	NJK		0131	100.1	081	004	005	
19:11:09	NJK		0131	100.1	079	004	005	
19:11:13	NJK		0131	102.9	078	004	005	
19:11:18	NJK		0131	102.9	077	004	005	
19:11:23	NJK		0131	102.9	076	004	005	
19:11:28	NJK		0131	102.9	076	004	005	
19:11:33	NJK		0131	101.5	076	004	005	
19:11:38	NJK		0131	101.5	075	004	005	
19:11:43	NJK		0131	101.5	075	004	005	
19:11:48	NJK		0131	101.5	075	004	005	
19:11:53	NJK		0131	101.5	076	004	005	
19:11:58	NJK		0131	101.5	076	004	005	
19:12:03	NJK		0131	101.5	076	004	005	
19:12:08	NJK		0131	101.5	076	004	005	
19:12:13	NJK		0131	100.1	076	004	005	

Report: Data Explorer - Aircraft Related, Track#=1474, [0131]
File: C:\Documents and Settings\Administrator\Desktop\INSTANT\08JUN22 ANOMOLY_08JUN22 ANOMOLY,
RNGW\08JUN22.Instant 08JUN22.Instant

Date: 14:57 Wednesday, June 15, 2022

Report: Data Explorer - Aircraft Related, Track#=1474, [0131] Jun 08 2022

Time	Sensor	Aid	Beacon Mode2	Type	Heading	Speed	Mode_C	UNC_Mode_C
19:12:18	NJK	0131		100.1	076	004	005	
19:12:23	NJK	0131		100.1	077	004	005	
19:12:28	NJK	0131		101.5	076	004	005	
19:12:33	NJK	0131		101.5	076	004	005	
19:12:37	NJK	0131		101.5	075	004	005	
19:12:42	NJK	0131		101.5	075	005	006	
19:12:47	NJK	0131		101.5	075	005	006	
19:12:52	NJK	0131		102.9	074	004	005	
19:12:57	NJK	0131		141.0	083	004	005	
19:13:02	NJK	0131		139.5	107	005	006	
19:13:07	NJK	0131		146.6	078	005	006	
19:13:12	NJK	0131		146.6	064	005	006	
19:13:17	NJK	0131		109.9	082	005	006	
19:13:22	NJK	0131		102.9	081	005	006	
19:13:27	NJK	0131		91.65	071	005	006	
19:13:32	NJK	0131		54.99	091	005	006	
19:13:37	NJK	0131		23.97	082	004	005	
19:13:42	NJK	0131		336.9	117	004		
19:13:47	NJK	0131		341.2	103	005	006	
19:13:52	NJK	0131		313.0	104	004	005	
19:13:57	NJK	0131		293.2	099	004	005	
19:14:02	NJK	0131		298.9	095	005	006	
19:14:07	NJK	0131		294.6	092	006	007	
19:14:13	NJK	0131		294.6	092	005	006	
19:14:14	NJK	0131		294.6	092	005-C	006-C	
19:14:17	NJK	0131		294.6	092	005-C	006-C	
19:14:19	NJK	0131		294.6	092	005-C	006-C	
19:14:22	NJK	0131		294.6	092	005-C	006-C	
19:14:25	NJK	0131		294.6	092	005-C	006-C	
19:14:27	NJK	0131		294.6	092	005-C	006-C	
19:14:31	NJK	0131		294.6	092	005-C	006-C	
19:14:32	NJK	0131		294.6	092	005-C	006-C	
19:14:37	NJK	0131		294.6	092	005-C	006-C	
19:14:37	NJK	0131		294.6	092	005-C	006-C	
19:14:42	NJK	0131		294.6	092	005-C	006-C	
19:14:43	NJK	0131		294.6	092	005-C	006-C	

* * * End of Report * * *

Report: Data Explorer - Position Related, Track#=1474, [0131]

File: C:\Documents and Settings\Administrator\Desktop\INSTANT\08JUN22 ANOMOLY_08JUN22 ANOMOLY, RNGW\08JUN22.Instant 08JUN22.Instant

Date: 14:56 Wednesday, June 15, 2022

Report: Data Explorer - Position Related, Track#=1474, [0131] Jun 08 2022

Time	Sensor	Azimuth/Degrees	Range	Lat/Long	X/Y
19:06:02	NJK	0826/075	24.44	32:56:40N/115:13:02W	23.39,7.07
19:06:06	NJK	0827/075	24.56	32:56:40N/115:12:52W	23.52,7.07
19:06:11	NJK	0829/075	24.66	32:56:37N/115:12:45W	23.64,7.02
19:06:16	NJK	0831/075	24.75	32:56:34N/115:12:37W	23.75,6.98
19:06:21	NJK	0832/075	24.84	32:56:34N/115:12:29W	23.85,6.96
19:06:26	NJK	0835/075	24.91	32:56:28N/115:12:23W	23.94,6.87
19:06:31	NJK	0836/076	24.94	32:56:26N/115:12:20W	23.98,6.84
19:06:36	NJK	0839/076	25.00	32:56:21N/115:12:13W	24.07,6.75
19:06:41	NJK	0842/076	25.06	32:56:15N/115:12:07W	24.16,6.66
19:06:46	NJK	0844/076	25.12	32:56:12N/115:12:01W	24.24,6.60
19:06:51	NJK	0847/077	25.19	32:56:06N/115:11:55W	24.33,6.50
19:06:56	NJK	0849/077	25.31	32:56:04N/115:11:45W	24.48,6.46
19:07:01	NJK	0849/077	25.41	32:56:05N/115:11:38W	24.56,6.48
19:07:06	NJK	0846/076	25.50	32:56:13N/115:11:34W	24.63,6.62
19:07:11	NJK	0842/076	25.56	32:56:23N/115:11:32W	24.65,6.79
19:07:16	NJK	0839/076	25.56	32:56:30N/115:11:35W	24.61,6.90
19:07:21	NJK	0836/076	25.50	32:56:36N/115:11:41W	24.52,7.00
19:07:26	NJK	0834/075	25.38	32:56:38N/115:11:51W	24.38,7.04
19:07:31	NJK	0833/075	25.25	32:56:38N/115:12:01W	24.25,7.04
19:07:36	NJK	0832/075	25.12	32:56:38N/115:12:10W	24.12,7.04
19:07:40	NJK	0831/075	25.00	32:56:39N/115:12:20W	23.99,7.05
19:07:45	NJK	0829/075	24.88	32:56:41N/115:12:30W	23.85,7.08
19:07:50	NJK	0829/075	24.78	32:56:39N/115:12:36W	23.76,7.06
19:07:55	NJK	0827/075	24.66	32:56:41N/115:12:46W	23.61,7.09
19:08:00	NJK	0826/075	24.53	32:56:41N/115:12:56W	23.48,7.09
19:08:05	NJK	0822/074	24.41	32:56:48N/115:13:07W	23.32,7.20
19:08:10	NJK	0825/075	24.28	32:56:39N/115:13:13W	23.23,7.06
19:08:15	NJK	0823/074	24.19	32:56:42N/115:13:21W	23.12,7.10
19:08:20	NJK	0822/074	24.06	32:56:42N/115:13:31W	22.99,7.10
19:08:26	NJK	0820/074	23.91	32:56:43N/115:13:42W	22.83,7.13
19:08:27	NJK	0822/074	24.06	32:56:43N/115:13:46W	22.78,7.13
19:08:30	NJK	0821/074	23.81	32:56:39N/115:13:48W	22.74,7.06
19:08:35	NJK	0819/074	23.69	32:56:41N/115:13:59W	22.60,7.09
19:08:40	NJK	0813/073	23.56	32:56:51N/115:14:12W	22.42,7.26
19:08:46	NJK	0814/074	23.42	32:56:45N/115:14:19W	22.31,7.16
19:08:47	NJK	0813/073	23.56	32:56:45N/115:14:23W	22.26,7.16
19:08:50	NJK	0815/074	23.34	32:56:43N/115:14:25W	22.23,7.13
19:08:56	NJK	0812/073	23.19	32:56:45N/115:14:37W	22.06,7.16
19:08:56	NJK	0815/074	23.34	32:56:45N/115:14:39W	22.02,7.16
19:09:00	NJK	0813/073	23.09	32:56:42N/115:14:43W	21.97,7.12

Report: Data Explorer - Position Related, Track#=1474, [0131]

File: C:\Documents and Settings\Administrator\Desktop\INSTANT\08JUN22 ANOMOLY_08JUN22 ANOMOLY,
RNGW\08JUN22.Instant 08JUN22.Instant

Date: 14:56 Wednesday, June 15, 2022

Report: Data Explorer - Position Related, Track#=1474, [0131] Jun 08 2022

Time	Sensor	Azimuth/Degrees	Range	Lat/Long	X/Y
19:09:05	NJK	0812/073	22.97	32:56:42N/115:14:53W	21.84,7.11
19:09:10	NJK	0813/073	22.84	32:56:37N/115:15:00W	21.73,7.04
19:09:15	NJK	0815/074	22.72	32:56:31N/115:15:07W	21.64,6.94
19:09:19	NJK	0816/074	22.59	32:56:27N/115:15:15W	21.52,6.86
19:09:24	NJK	0817/074	22.50	32:56:23N/115:15:21W	21.45,6.80
19:09:29	NJK	0819/074	22.38	32:56:17N/115:15:27W	21.35,6.70
19:09:34	NJK	0820/074	22.28	32:56:13N/115:15:33W	21.27,6.64
19:09:39	NJK	0820/074	22.16	32:56:11N/115:15:42W	21.15,6.60
19:09:44	NJK	0818/074	22.06	32:56:13N/115:15:49W	21.04,6.64
19:09:49	NJK	0815/074	21.97	32:56:17N/115:15:58W	20.92,6.71
19:09:54	NJK	0812/073	21.91	32:56:22N/115:16:05W	20.83,6.79
19:09:59	NJK	0808/073	21.88	32:56:29N/115:16:10W	20.76,6.90
19:10:04	NJK	0802/072	21.91	32:56:41N/115:16:12W	20.73,7.10
19:10:09	NJK	0800/072	21.97	32:56:46N/115:16:10W	20.76,7.19
19:10:14	NJK	0798/072	22.09	32:56:52N/115:16:03W	20.86,7.29
19:10:19	NJK	0797/072	22.19	32:56:56N/115:15:57W	20.94,7.36
19:10:24	NJK	0797/072	22.31	32:56:58N/115:15:49W	21.05,7.39
19:10:29	NJK	0799/072	22.41	32:56:57N/115:15:41W	21.16,7.36
19:10:34	NJK	0800/072	22.53	32:56:57N/115:15:32W	21.29,7.37
19:10:39	NJK	0801/072	22.62	32:56:57N/115:15:25W	21.39,7.37
19:10:44	NJK	0803/073	22.72	32:56:55N/115:15:17W	21.50,7.33
19:10:49	NJK	0805/073	22.81	32:56:53N/115:15:09W	21.61,7.30
19:10:54	NJK	0807/073	22.91	32:56:51N/115:15:01W	21.73,7.26
19:10:59	NJK	0809/073	23.03	32:56:49N/115:14:51W	21.86,7.23
19:11:04	NJK	0808/073	23.09	32:56:52N/115:14:47W	21.92,7.29
19:11:09	NJK	0810/073	23.19	32:56:50N/115:14:40W	22.02,7.25
19:11:13	NJK	0813/073	23.25	32:56:45N/115:14:33W	22.12,7.16
19:11:18	NJK	0814/074	23.34	32:56:45N/115:14:26W	22.22,7.16
19:11:23	NJK	0815/074	23.44	32:56:45N/115:14:19W	22.32,7.16
19:11:28	NJK	0816/074	23.53	32:56:44N/115:14:11W	22.42,7.15
19:11:33	NJK	0817/074	23.62	32:56:44N/115:14:04W	22.52,7.14
19:11:38	NJK	0818/074	23.72	32:56:44N/115:13:57W	22.62,7.14
19:11:43	NJK	0820/074	23.81	32:56:41N/115:13:49W	22.73,7.09
19:11:48	NJK	0822/074	23.91	32:56:39N/115:13:41W	22.84,7.05
19:11:53	NJK	0823/074	24.00	32:56:38N/115:13:34W	22.94,7.04
19:11:58	NJK	0825/075	24.09	32:56:35N/115:13:26W	23.06,7.00
19:12:03	NJK	0825/075	24.19	32:56:37N/115:13:19W	23.15,7.03
19:12:08	NJK	0826/075	24.28	32:56:37N/115:13:13W	23.24,7.02
19:12:13	NJK	0828/075	24.38	32:56:34N/115:13:04W	23.36,6.98

[2]

Enclosure (64)

Report: Data Explorer - Position Related, Track#=1474, [0131]
File: C:\Documents and Settings\Administrator\Desktop\INSTANT\08JUN22 ANOMOLY_08JUN22 ANOMOLY,
RNGW\08JUN22.Instant 08JUN22.Instant

Date: 14:56 Wednesday, June 15, 2022

Report: Data Explorer - Position Related, Track#=1474, [0131] Jun 08 2022

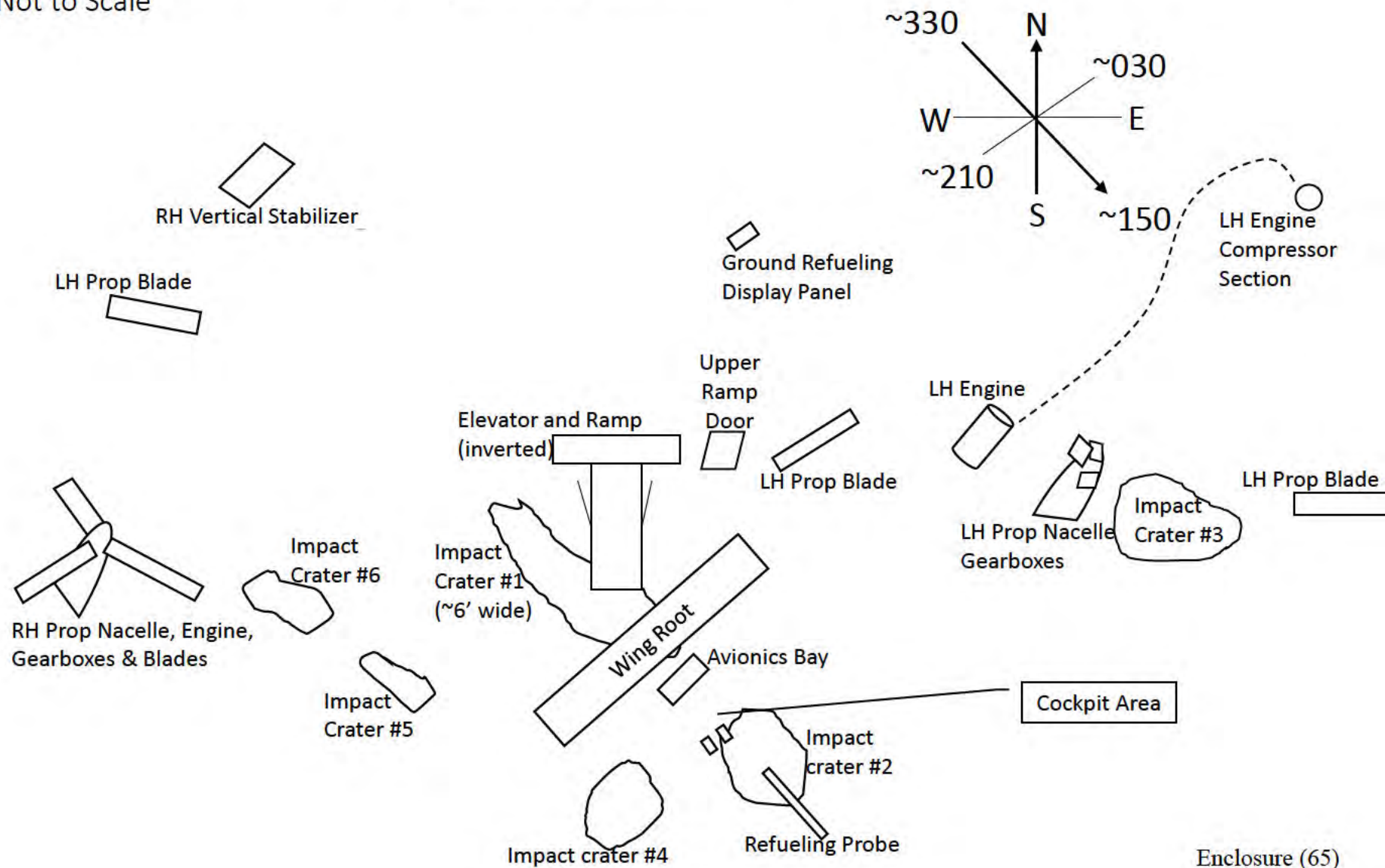
Time	Sensor	Azimuth/Degrees	Range	Lat/Long	X/Y
19:12:18	NJK	0829/075	24.47	32:56:34N/115:12:57W	23.46,6.97
19:12:23	NJK	0831/075	24.56	32:56:31N/115:12:49W	23.58,6.92
19:12:28	NJK	0832/075	24.62	32:56:30N/115:12:44W	23.65,6.90
19:12:33	NJK	0834/075	24.72	32:56:27N/115:12:36W	23.76,6.86
19:12:37	NJK	0835/075	24.81	32:56:27N/115:12:29W	23.85,6.85
19:12:42	NJK	0835/075	24.91	32:56:28N/115:12:23W	23.94,6.87
19:12:47	NJK	0838/076	25.00	32:56:23N/115:12:14W	24.06,6.79
19:12:52	NJK	0840/076	25.06	32:56:20N/115:12:08W	24.14,6.73
19:12:57	NJK	0844/076	25.09	32:56:11N/115:12:03W	24.21,6.59
19:13:02	NJK	0847/077	25.16	32:56:06N/115:11:57W	24.30,6.50
19:13:07	NJK	0848/077	25.19	32:56:04N/115:11:54W	24.35,6.46
19:13:12	NJK	0850/077	25.22	32:56:00N/115:11:50W	24.39,6.40
19:13:17	NJK	0852/077	25.31	32:55:57N/115:11:42W	24.51,6.35
19:13:22	NJK	0853/077	25.41	32:55:56N/115:11:35W	24.60,6.33
19:13:27	NJK	0853/077	25.50	32:55:57N/115:11:29W	24.70,6.36
19:13:32	NJK	0851/077	25.62	32:56:04N/115:11:21W	24.80,6.46
19:13:37	NJK	0849/077	25.69	32:56:09N/115:11:19W	24.84,6.55
19:13:42	NJK	0845/076	25.69	32:56:18N/115:11:22W	24.80,6.71
19:13:47	NJK	0842/076	25.69	32:56:26N/115:11:24W	24.77,6.82
19:13:52	NJK	0839/076	25.62	32:56:31N/115:11:31W	24.67,6.92
19:13:57	NJK	0837/076	25.53	32:56:34N/115:11:38W	24.56,6.97
19:14:02	NJK	0834/075	25.44	32:56:39N/115:11:47W	24.45,7.06
19:14:07	NJK	0832/075	25.34	32:56:43N/115:11:55W	24.33,7.11
19:14:13	NJK	0830/075	25.20	32:56:44N/115:12:06W	24.18,7.13
19:14:14	NJK	0832/075	25.34	32:56:44N/115:12:10W	24.12,7.13
19:14:17	NJK	0829/075	25.08	32:56:44N/115:12:15W	24.05,7.13
19:14:19	NJK	0832/075	25.34	32:56:44N/115:12:21W	23.97,7.14
19:14:22	NJK	0828/075	24.95	32:56:44N/115:12:25W	23.91,7.14
19:14:25	NJK	0832/075	25.34	32:56:44N/115:12:33W	23.80,7.14
19:14:27	NJK	0827/075	24.81	32:56:44N/115:12:35W	23.77,7.14
19:14:31	NJK	0832/075	25.34	32:56:44N/115:12:44W	23.65,7.14
19:14:32	NJK	0826/075	24.69	32:56:44N/115:12:44W	23.64,7.14
19:14:37	NJK	0832/075	25.34	32:56:44N/115:12:55W	23.49,7.14
19:14:37	NJK	0825/075	24.56	32:56:44N/115:12:54W	23.51,7.14
19:14:42	NJK	0823/074	24.44	32:56:44N/115:13:03W	23.38,7.14
19:14:43	NJK	0832/075	25.34	32:56:44N/115:13:07W	23.32,7.14

* * * End of Report * * *

Swift 11 Crash Site approximately 150m x 150m

Longitudinal Axis ~150/~330 degrees (magnetic)

*Not to Scale



MA1 Crash Site Photos



















June 13, 2022

El Centro, California

From: Mishap Investigation Support Team (MIST)

To: VMM-364 Aviation Mishap Board (AMB)

Title: Report containing findings from the in-field investigation concerning the VMM-364 class A mishap involving an MV-22B, Aircraft BUNO #168018 which occurred on 8 June 2022.

In the analysis of the wreckage, the following items were the points of interest for the infield investigation: the CAD/PADS, the Aviation Life Support Systems (ALSS), the two pilot's seats, and the aircraft wreckage.

CAD/PADS

There were no anomalies found for the CAD/PAD systems. Some CAD/PAD from the cockpit severance assemblies were not detonated sympathetically from the post-crash fire. No attempts to use CAD/PAD to egress the aircraft were noted. The Port Side SS66 Fire Extinguisher CAD, SN 485, was recovered and not actuated. The rest of the CAD/PAD was not found, but expected to be consumed or expended due to fire.

Aviation Life Support Systems (ALSS)

There were components of the ALSS for each of the five aircrew found in the wreckage. With an exception to some survival items found forward and right of the cockpit, there was substantial thermal damage to the ALSS found. None of the survival vest ensembles were recovered intact. While some components of the survival vests were found, including all 5 CSEL radios, most of the ALSS was consumed in the post-crash fire. There was a visor cover, and both a day and night visor found forward and to the right of the cockpit, but none of the HGU-84's were recovered. The figures below show some of the ALSS components recovered.



CMU-37 Snap Hook and D-Ring



AE Vest Cobra Fitting



Visor Cover

Figure 1: Recovered ALSS

Pilot Seats

Both pilot seat were substantially damaged by the post-crash fire. Except for ceramic armor, both seat buckets were completely consumed. Components of both seat support frames were found and the Variable Load Energy Absorbers (VLEA) were intact. Neither of the seat support structures were recovered attached to bulk head structure. The weight settings for the VLEAs could not be determined due to thermal damage. The energy absorbers were measured and neither seat stroked. Figure 2 and figure 3 below shows the VLEA assemblies for the pilot seats.



Figure 2: Port Side Seat VLEA Assembly

Enclosure (67)



Figure 3: Starboard Seat VLEA Assembly and Support Structure

Enclosure (67)

While no webbing was recovered for the restraint systems, both rotary buckles were recovered in close proximity to the seat support structures. Both experienced thermal damage to varying degrees. One of the rotary buckles was recovered with all four restraint tangs still secured as seen on the right in figure 4 below. The other buckle had its face completely consumed by fire and an adjustment clip from a CMU-38 fused to it. All four tangs were unsecured. Three of the four tangs were in the immediate vicinity to include the two shoulder strap tangs and a single lap belt tang. The other lap belt tang was recovered roughly three feet away, near pieces of ALSS. None of the restraint tangs were bent on either buckle. The condition of the buckles can be seen below.



Figure 4: Restraint Buckles from Pilot Seats

Aircraft Wreckage

The aircraft broke up during the mishap and experienced substantial thermal damage post-crash. Aircraft components were found in abnormal positions. Troop seat components were found forward of cockpit bulkhead structure. There was significant damage observed on the pilot seat bulkhead tracks. The pilot seat support structures were recovered in very close proximity to each other and they were not attached to any aircraft structure.

Conclusions

The thermal environment damaged and consumed much of the evidence typically evaluated during a MIST infield investigation. However based on what was found, the mishap was non-survivable for the entire crew. When evaluating survivability the acronym CREEP is used (**C**ontainer, **R**estraint, **E**nvironment, **E**nergy Absorption/Escape, and **P**ost-Event Factors). It only takes one facet of CREEP to be outside of human tolerances for a mishap to be considered non-survivable. In this mishap there were several.

Survivable space wasn't maintained for any of the crew during the mishap due to the aircraft breaking up. Aircraft intrusion could result in serious injury or death. Restraint wasn't maintained for the pilots as demonstrated by the separation of the seat support structure from the aircraft bulkhead. The tie down chain was compromised as the seats separated from the aircraft structure. With regard to energy absorption, the pilot seats

did not absorb energy in the vertical direction relative to the seats. The seats are designed to stroke at roughly 14 G's. Off axis loading or failure of the seat support structure could cause the seat not to stroke. In accordance with specifications, the pilots' seat (to include the entire seat assembly and attachment points on the bulkhead itself) are certified to provide restraint at 32 G's, 50 ft/sec and a vertical acceleration of 50 G's, 50 ft/sec with a 230 lbs occupant.

The aircraft experienced a significant post-crash fire. In the event of a mishap involving a post-crash fire, timely egress is critical for survival. Due to the lack of restraint, energy absorption, and intrusion into the survivable space, serious injury could have been experienced by the crew. Even minor injuries which can limit or prohibit egress have the potential to be catastrophic with a post-crash fire.

There was no evidence found that would indicate that any of the CAD/PAD items would not have functioned as designed if actuated. All live CAD/PAD that were found, were separated and marked with red flags on the mishap site. It is recommended that EOD dispose of the remaining CAD/PAD in that area to eliminate CAD/PAD hazards.

Respectfully,

NAVAIR, MIST Infield Team Lead
tel.
cell.

CAD/PAD MIST Lead
tel.
cell.

NAVAIR, MIST Team
Crashworthy Systems
tel.
cell.

MP3

Shank

OSC Notes

MISSION: LATICAL/RVL											
JULIAN DATE: 22159		CAL DATE: 8-Jun-22		TIME PER(S): -7		MODES:					
EVENT 1 2 3 4 5 6 7 8 9 10 11 12		CREWS				C/S		C2		TACAN	
ST11		LOSAPIO / SAX				BLOPPY				11Y	
ST12		RASMUSON / CARLSON / STRICKLAND								74Y	
BTU		GOLD 14 CHATTERMARK 25 → 1A → 3A									
FLIGHT NOTES											
RE L-HOUR: 16:31:00											
RE SYS TOT: 16:29:30											
1,000 ft - Singles											
1,200 ft - Sahen											
TAC FORM maneuvers											
A-B: 1268											
C-D: 289											
BPN COM 1											
5.5K Min T/O RUPG-KHII											
17K											
0130/31											
4 charred bodies											
USABLE LOAD 5%											
KNFG KHII RICE 1 199 3 537 2 178 L R											
BTN AGENCY CALLSIGN FREQ SECONDARY COLOR											
1 SWIFT BASE BASE 344.375 PURPLE											
2 KNFG ATIS ATIS 285.45											
3 KNFG CLEARANCE CLEARANCE 271.6											
4 KNFG GROUND GROUND 360.2											
5 KNFG TWR TOWER 340.2											
6 LNG RIFLE LONG RIFLE 310.3											
7 CAMP PEN GCA CAMP PEN GCA 236.3											
8 SOCAL DEP SOCAL 127.3											
9 LA CENTER LA CENTER 128.6											
10 3MAW WEST 3MAW W 305.9											
11 EAST CO CMN ECG 255.1											
12 3MAW EAST 3MAW E 263.65											
13 HOLF COMMON HOLF CMN 249.9											
14 SQD TAC PRI SWIFT 366.15 LILAC											
15 SQD TAC ALT SWIFT 326.65 LAVENDER											
16 KIPL CTAF IPL CTAF 122.7											
17 KIPL ASOS IPL WX 132.175											
18 HOLTVILLE HOLT 123.0											
19 YUMA RANGE YUMA RKG 276.0 274.0											
20 YUMA APPROACH YUMA APPCH 124.7											
21 KNKX WX MIRAMAR WX 352.0											
22 KNKX TWR FOSS TWR 288.925											
23 KNJK ATIS ELCENTRO WX 269.275											
24 KNJK TWR ELCENTRO TWR 119.1											
25 364 FM SWIFT 36.35 VIOLET											
26 KHII FBO AIR CENTER 123.5											
27 KHII ASOS HAVASU WX 119.025											
28 KHII CTAF HAVASU CTAF 122.7											
29 FSS RADIO 255.4											
BTN AGENCY CALLSIGN FREQ SEC											
INKY BARLEY INKY 264.7											
FUELS											
MSN 15.0											
TAKEOFF 10.5											
BINGO 1 2.3											
BINGO 2 3.4											
NOTES											
RE-KHII											
INKY-KNFG											
RAMROD / SARNEG											
FLESH GRANT FLY MAR INERS											
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9											
WEAPONS											
AN/ALE-47											
O1 10											
SEMI 1T											
O2 40											
CH 20											
FL 20											

MP4

2x53 wolfpack on deck

1x60 landslide 2100 @ 2000Z

4 bodies

21 (N) 240/8 G15 10/c 24/16 24802

Enclosure (69)

VMM-364 Downed Aircraft

6/8/2022

1245 Contacted from KNJK Base OPSO. DDO. MV-22 (VMM-364 callsign SWIFT 12) / 5 souls / R2512
Wingman SWIFT 11 OSC
N32 56.629 W115 12.148 approx 1nm E of Inky Barley
1250 LS 05 On Station
1255 Wolfpack 11&12 on deck to assess scene. 4 individuals found deceased. 1 not found.
1255 LS 20 enroute ()
1300 OSC nearing bingo
1305 LS 05 takes OSC
1324 05 only on station 2400#
20 yo-yo to IPL
1325 Initial call to REACH
1345 Imperial Fire crew on station awaiting approval from Fed Fire due to ordinance on board;
REACH not launching due to deceased nature
1348 Coronor enroute
1348 Fed Fire approval granted
1411 Fed Fire 5min out. El centro and IPL Fire on station
1428 SWIFT 11 text saying not making it back out
1505 LS 05 in chocks KNJK
1510 LS 20 relieved. Fed Fire has control of crash scene.
1520 LS 20 in chocks KNJK

285611

Enclosure (70)

POC	Contact	
SWIFT TAC		306.15
YUMA Range		276.0

VMM-364 ODO

Life Flight

HSC-3 DET MX

KNJK FED Fire Chief

KNJK Base XO)

KNJK Base OPSO

SWIFT 11)

Mishap Logbook Page 1

6/8/2022

SCRIBE

Text from Ferry in ST 12 @ 1230L

- ST 11/12 TG in inky @ 1230L 6/8/2022

↳ ST 11 hot boxes goes in do overhead to cool off

↳ ST 12 makes a pass sees black smoke and debris parts

1234L - Ferry text Yuma Sharratt Scrambled

1253L - 2x 53's, 1x 60 on scene, Ferry text

1305L - Ferry text, 53's report 4 bodies, looking for son

1314L - Ferry text, ST 12 RTB

1330L - ST 12 calls 15 min out radio

- ST 11 / AC 16 / 168018

Mishap Logbook, Page 2

TASKS		Start	Complete
1:	[REDACTED]	1238L	1246L
2:	[REDACTED]	1235L	1300L
Contacted MAG XO, MAG CO notified			
3:	DILL	1239L	1301L
IPL Ambulance 1222, 53' overhead, HSC @ 1250L ETA 1315L			
4:	[REDACTED]	1249L	
Flash Report, auxiliary Co approved 1342L			
5:	[REDACTED]	1251L	1320L
MAG-39 working Flash Report, [REDACTED]			
6:	[REDACTED]	1251L	1317L
Locked, key to Vance			
7:	[REDACTED]	1251L	1308L
WX Grabbed from EL Centro			
RED:	[REDACTED]	1258L	1315L
SI acquired, PCR started			
DRL NOTIFIED:	[REDACTED]	1258L	1317L
SAFETY CENTER called [REDACTED]			
SPURSE GROUPS DISABLED: [REDACTED]			
			1335

Mishap Logbook Page 3 & 4

TASKS/TIMELINE

Forward Facing Social Media Disabled: Manzanar Start Complete
1325L

R2512 Range Notified ^{Keep} Range Hot: DIL 1310L

YUMA EOP DISPATCHED: [REDACTED] 1420L

- EOP advised not to touch anything
- meet up grid @ 11SP56530949404, 2 off road @ grid vehicles
- 4:00 time

STAFF SYNC IN READY ROOM 1500L 1530L

ST12 EXPENDED 500/1200 Rds. 50 cal [REDACTED] 1520L

↳ ST11 EXPENDED 300/1200 900 expected remaining 50 cal

[REDACTED] RECALLED 1240L

Maintenance Checklist started @ 1255L

Ops Checklist started @ 1250L

- OPREP 3 Phone call complete 1250L
- OPREP 3 ELECTRONIC REPORT drafted: [REDACTED]
- ops records collected 1310L List in mishap case
- ↳ WX/ECTPLN/Brief [REDACTED]
- R2512 Yuma Range called: DIL 1310L
- ↳ Range staying hot
- HSC-3 comm Bridge: [REDACTED]
- DOC CHEN NOTIFIED: 1333L

AWSI [REDACTED] HSC-3, H-60 crew chief CFR

- Firefighting ongoing 1335L
- Let AC Burn
- Took off to take pictures of site
- ↳ Venues phone number provided for pictures
- NAS EL CENTRO, COMMS with tower @ EL CENTRO

Mishap Logbook Page 5 & 6

CONTACTS

MCAS YUMA XO: [REDACTED]

LEG IRON: [REDACTED]

HSC-3 DET OIC: [REDACTED]

CEU

BRAWLEY DISPATCH: 760-351-7765

- IPL FIRE DEP: 760-334-1234 [REDACTED]

- Brawley Fire Dep: 760-334-1234 (Chief York)

- IPL Sheriff: 442-265-2000 Ext. 0

OSC "LANDSLIDE 05" [REDACTED]

→ REACH, CONTACT CASEVAC

[REDACTED] 760-725-6770 EOD

INOPS Yuma EOD

MCAS EOD, POC crash site

RECLIMATION TEAM INFO

Yuma Range POC [REDACTED]

Meet w point - 11SPSG530949409, 4000 From NFG to SYC

SOI EL CENTRO [REDACTED]

EL CENTRO OPS ^{OSC} - 760-339-2601

/ HTRF / RASH / ANT FIRE - 760-235-9596

Mishap Logbook Page 7 (End)

1530/08 JUNE

WITNESS STATEMENT

Name	Captain	
HMH-466	Rank/Rate	EDIPI
Command		QA
		Section
Email		Phone

I, /7566, affirm that the following written statement is a fair, accurate and true summary of the statement I made on 29 June 2022 to the Class A Aviation Mishap JAGMAN investigation team, who explained the purpose of the JAGMAN investigation and the difference between the JAGMAN and Aviation Mishap Safety Investigation.

My MOS is a CH-53 pilot, my billet is quality assurance officer. I've been flying the CH-53 for three or four years and I have about 700 flight hours, 450 flight hours on the CH-53. I am certified as division lead TERF-I, section lead, functional check pilot, and HAC.

On 8 June 2022 I was section lead for our flight that day which including confined area landing (CAL) training, terrain flight training, and aerial gunnery training within the 2507 Mount Barrow aerial gunnery range. We were notified via Leg Iron, the Yuma Range control, 310.0 frequency, they requested we investigate potential emergency landing in the 2512 Inky Barley range complex. I have flown in the Yuma range area and knew 2512 was east of us. We cleared and safe'd our weapons. We started to egress the range and join up with the other aircraft in our section. We were lead aircraft so I climbed up to get above a couple mountains were flying by to get better communications. In addition to Leg Iron we were given the air flight frequency for the Swift MV-22 section. At first we did not get any response, but eventually we heard from Landslide, the Navy UH-60 helicopter, and the other MV-22 which was in the overhead. It took us about 15 minutes to arrive at the crash site because we had to clean up and secure our gun before we could egress.

As we approached the crash site we noticed the black smoke. While it was too high to be a smoke grenade, it appeared like a smoke grenade had exploded. At that point we didn't know if someone had made an emergency landing and then set off a smoke grenade. We did an initial orbit to assess the site by coming north of the site and avoid the smoke. It was hard to make out what we were looking at initially but then I was able to identify one prop on the side, another way out there. It looked like a bunch of burnt debris, too. It looked like the mishap aircraft was going from north to south, so a southerly heading. I could not make out where the cockpit was because the aircraft was so burnt. It appeared that the fire had been going for a while.

My co-pilot was not a new pilot, so I let him land the helicopter. I told him not to land too close, but close enough for us to investigate the site and hopefully find that everyone got out. We landed to the east side of the crash with a westerly heading. Our dash two landed echelon left. There was no brown-out when we landed. The crew members of our section got out to see if they could find any survivors but they did not find any. The fire was still smoldering but the crew was able to get pretty close to the crash site. They did identify four bodies but could not find the fifth even though the Swift aircraft said there were five aboard the mishap aircraft. Our crew members did expend their fire bottles but it did not do much, it was not effective. They brought the empty

fire bottles back with them. I never got out of the aircraft but I looked in the actual debris and around the site and kept communicating with Swift and Landslide to see if they had seen any survivors but they did not. I acted as the on-scene commander for about 5 or 10 minutes and we would pass off the on-scene commander with Landslide. I told my crew not to take any pictures and not to note any details so that this information would not be released inappropriately but that I would maintain all the notes for the record as the on-scene commander. We stayed on station for 20 or 30 minutes. I got an honest assessment of our section that our crew and the other crew were safe to fly back and we took off. None of the pilots in our section had responded to a mishap like that before.

We did not encounter any birds or interlopers except Swift and Landslide. Generally, bird activity is low out there. Winds were from the south because I saw the smoke billowing towards the north.

I swear (or affirm) that the statement provided is truthful so help me God.

(Witness' Name)

Sworn to before me this date.



02 Aug 2022

Date

1637

Time

(Investigator's name)

Date

Time

Enclosure (72)

WITNESS STATEMENT

Name	Sergeant	
HMH-466	Rank Rate	Flightline
Command		Section
Email		Phone

I, _____ /6173, affirm that the following written statement is a fair, accurate and true summary of the statement I made on 29 June 2022 to the Class A Aviation Mishap JAGMAN investigation team, who explained the purpose of the JAGMAN investigation and the difference between the JAGMAN and Aviation Mishap Safety Investigation.

My MOS is 6173, a CH-53E crew chief, I am a Weapons and Tactics Instructor (WTI) within the squadron. I've been in the Marine Corps for five years. I have completed basic mechanics school, then spent time in Marine Heavy Helicopter Training Squadron 302 (HMHT-302), Night System Instruction (NSI), Aerial Gunnery Course to be an aerial gunner, Weapons and Tactics Instruction Course, and an aircraft firefighting course for shipboard operations. I received basic first aid instruction during swim qualification.

I was part of the aircrew that responded to the mishap on 8 June 2022. We were conducting aerial gunnery training in the Mount Barrow near Imperial California in order to obtain the appropriate qualifications for several of our crew chiefs that day. We were called by range control who indicated that there was a down V-22 but we did not receive any more details. Our communications were broken because we were in between some mountains. We then climbed in order to get better reception and obtain more information and headed towards the mishap site. I was in the lead aircraft with _____. It took us about 15 minutes to arrive at the site of the mishap after we first were alerted of the downed V-22.

As we approached the scene we saw the smoke and flew towards it. We then got into contact with the MV-22 that was flying overhead to coordinate efforts. We were transiting around 1000 feet to the mishap aircraft. We did not see any bird activity. We were also communicating with range control because we could not immediately get in contact with the other MV-22. As soon as we were told that the MV-22 could not land we immediately decided we would land to assess the situation and see if we could find anyone. There was also a UH-60 that arrived just after us, however, because we arrived first we decided that our section would land.

Every time we land we conduct a risk assessment and observed for a tenable landing area. We identified a safe location that did not interfere with the crash site and still allowed us to be close enough to assist, less than a quarter mile away. When we landed we were facing about west, the winds were going mostly north so there was really no smoke coming toward us. When we landed we took several fire bottles from both our aircraft and I instructed the other CH-53 crew chiefs to bring their fire bottles as well. We ran over to the downed aircraft in order to identify any survivors. I stripped my helmet and flight vest so I could move around faster. My crew chief and I were the first to arrive at the mishap aircraft and then the crew members from the other aircraft arrived seconds later _____ S

all got out of our aircraft to assess the scene. We split into two groups, I went left and

Enclosure (73)

others went right to see if there were any survivors. Eventually both groups made it all the way around the aircraft. We attempted to put out a small fire on one of the members of the mishap aircraft who was in the right seat of what appeared to be the cockpit, but it did not work. There were no survivors. We located four bodies, but could not find the fifth. We could see one pilot in the cockpit seat. One body appeared to be next to that pilot that I assessed to be a crew member because I know they have those door seats and that's basically where that crew member would have been. The other cockpit seat I could not tell if there was anyone in there. There were two bodies generally where you would expect crew members if they were conducting tail gunnery operations. These last two appeared to have been on gunners belts and were not thrown from the aircraft.

The aircraft was right side up and it appeared they had tried to land. The area around the crash site looked like a tenable landing site in my opinion. It did not look like the aircraft rolled or pitched. It looked like there were no skid marks so that they impacted straight down, just like it normally lands. The landing gear appeared to have been down because it looked like the nose wheel was canted out front, like 45 degrees, which indicated to me that it had impacted in the crash. It looked like it was heading south/southeast. There was still an active fire when we arrived and based on my aircraft firefighting training and my experience of other aircraft crashing, aircraft do burn quickly. There were a few smaller active fires, the wing itself was red hot and smoldering, and the surrounding area was black. I did not see or hear any .50 caliber ammunition cook off, but one tire did explode from the heat. We brought all the fire bottles we brought out to the aircraft back with us when we left the site.

I swear (or affirm) that the statement provided is truthful so help me God.

(Witness' Name)

Sworn to before me this date.

20220809
Date

1756
Time

(Investigator's name)

Date

Time

Enclosure (73)

WITNESS STATEMENT

Name	Staff Sergeant	EDIP
HMH-466	Rank/Rate	Ordnance
Command		Section
Email		Phone

I, /6531, affirm that the following written statement is a fair, accurate and true summary of the statement I made on 29 June 2022 to the Class A Aviation Mishap JAGMAN investigation team, who explained the purpose of the JAGMAN investigation and the difference between the JAGMAN and Aviation Mishap Safety Investigation.

My MOS is 6531 aviation technician, I have been in the Marine Corps for nine years eight months, and been a part of the squadron for 18 months and been the aviation ordnance chief for that entire 18 months. I attended 'A' school in Pensacola, FL, I was assigned to AV-8B harrier jets out of school so I went to 'C' school in Cherry Point, NC. After that I was assigned to Marine Attack Squadron 542 (VMA-542) in Cherry Point, NC. I served in VMA-542 for five years, deployed several times including with the 31st MEU and obtained the highest qualifications for my MOS including quality assurance safety observer.

On 8 June 2022 I was going out to get my gun shoot codes in the aerial observer program in the Imperial County area. We were first alerted to a possible issue with a MV-22 after we had already completed one pass in the firing range but before we had begun the second pass. The crew chief, , told me to hold off because we were getting some chatter on the radio. The inter-communication system (ICS) was not very clear, so we put the weapons on safe and tried to climb in order to better hear the call. It was about five to eight minutes after the original call that we left our range in order to go assist with the incident. It took us about 8-10 minutes to arrive at the crash site. We saw some smoke off in the distance and started to fly towards it. The closer we got, it appeared to be a black spot on the ground with parts scattered about, unrecognizable as an aircraft. The pilots then began to discuss where we could land and eventually we did land. At that time and I all got out, we grabbed a fire bottle and some IFAKs and ran about a football field to the crash site. We were able to walk right up next to it. The engine rotor was about 30 feet away from us. The whole crash site was about a 20-30 yard diameter. We walked around the whole site and found a body in a corner of the crash. We did not realize right away what we were looking at but eventually determined that was a body in a seat. Once we realized what we were looking at, it started to sink in how bad this was. One of the other air crewman said they saw another body but I could not make out what they were pointing to. At that point we spread out to see if we could find any other bodies or survivors or anything else that could be useful. We did find one of the Captain's common access cards in the sand. There were a bunch of smaller fires around. The heat was unbearable. I told everyone we needed to back away from the aircraft in case there was another explosion because we had heard something that sounded like an aerosol can exploding in a fire which could have been a cook off of some of the ammunition. It seemed like the explosion happened within 10 feet of the bodies near the back of the aircraft. We did expend the fire bottle had on the bodies and brought the fire bottle back with us to the helicopter.

Enclosure (74)

I did not see any skids in the sand, the terrain seemed untouched except for the crash site. I did not see any craters except for the spot where the aircraft was.
I swear (or affirm) that the statement provided is truthful so help me God.

(Witness Name)

Sworn to before me this date.

Aug 02 2022
Date

1512
Time

(Investigator's name)

Date

Time

WITNESS STATEMENT

Name	Lieutenant	EDIP
HSC-3	Rank/Rate	SRP
Command		Section

I, _____ USN, affirm that the following written statement is a fair, accurate and true summary of the statement I made on 29 June 2022 to the Class A Aviation Mishap JAGMAN investigation team, who explained the purpose of the JAGMAN investigation and the difference between the JAGMAN and Aviation Mishap Safety Investigation.

I have been in the Navy for 16 years, 7 years as a Naval Aviator. I have over 1,400 hours in the MH-60S. I am currently an FRS Instructor out of North Island. I work in the Search and Rescue Program management office as a Search and Rescue Evaluator. I evaluate units on the West Coast and in 7th Fleet for Search and Rescue standardization. I had been the On Scene Commander in one other mishap prior to this day.

The day of the mishap, I was training CAT I pilots in Terminal Area Employment—essentially TERF landings to unprepared landing zones east of El Centro. It was very hot out, the second hottest day of our detachment. We were operating right at the ambient heat limits of some of our systems; we had to go APU Hot to cool our gearbox. The zones we were working that day were LZ Sparrow, which is East of the 2512, and LZ Holtville, which is South of the 2512. I had observed very little bird activity in the area that day and over the week of the detachment; I had been in the 2512 just two days before, and there was no bird activity.

I was on my second event of the day transiting eastbound when I received a text message from our SDO asking if we were near the 2512; an Osprey needed assistance. From the text, I assumed they needed help, but I didn't imagine it was such a catastrophic crash. At this point I hadn't heard anything on guard, and I wasn't monitoring any of the 2512 radio frequencies, so this message was the first notification I had.

I looked out my left window towards the 2512, and I saw a plume of smoke between about 500-800 feet. It seemed to be fairly light smoke, so I assumed it might have come from an APU fire or something similar. We climbed up to about 2,000 feet to contact Leg Iron, from whom we got Swift's tactical frequency; once we got that frequency, we descended to about 1,000 feet enroute to the crash. Within 7 minutes of receiving the text message, we were on scene. It seemed like we got there around 15-20 minutes after the crash. We checked in with Swift, and they asked us if we had fire extinguishers, which we did, so we planned to land and potentially help with the fire.

When we saw the crash, it looked as if the fire was dissipating, although things were definitely still on fire. The smoke was moving Southeast to Northwest; winds were light maybe 5-10 knots. There was a very small, single point of impact. The spot was small; I couldn't believe an Osprey could fit in that spot. Furthermore, we were surprised by how tight the scattering of debris was. I would've expected a much larger debris field, but everything was very concentrated. We conducted standard search patterns but couldn't find any debris outside of the

Enclosure (75)

immediate crash site. The only really recognizable parts of the Osprey was one of the rotor heads and a paddle, both of which were very close to the point of impact. The rotor head was on the East side of the crash within 50 yards of the spot. It seemed as if the aircraft was in a South to North orientation, but really I'm just guessing since the wreckage was so bad. The crash seemed to be about 10 miles east of the actual target, which I believe was Inky Barley.

As we were coming in, I heard a 53 section check in, Lone Wolf or something like that. We heard either Swift or the 53s mention the downed Osprey had had hot boxes, so they had climbed up to cool them, and then next thing they knew, their wingman's aircraft was in two pieces on the ground. Swift communicated that they couldn't land, although I can't remember why. The 53s were already set up to land and were lower than we were, so we had them land first. We watched them land, and I was surprised that they didn't kick up more dust; I would've thought 53s would've made a bigger cloud of dust. They landed pretty far from the wreckage, ensuring that their downwash didn't make any type of impact on/disturb the wreckage. Two of their crew chiefs had to hike with their fire extinguishers to get over there. They were pretty frank; they said they saw "four charred bodies," but they were unable to find the fifth crew member. They also assessed that it would be fruitless for us to land with our extinguishers.

Swift was above us in the overhead by at least 500 feet or so. The aircraft commander was very calm and in control; I didn't know how he was doing it. They mentioned that they were about to bingo out to get back home, and so we prepared to take over as On Scene Commander. They passed us a bunch of information, including that the downed aircraft had five crew, that they themselves were Bingo and would not be returning. They asked us not to leave the site; we ended up staying for at least another 1.5 hours. The 53s eventually had to leave, as well; they had a landing time that they couldn't miss, back on Miramar, I believe.

Once Swift and the 53s left, we saw a bunch of ground vehicles who were inbound to help waiting outside of the range. It seemed like they were trying to figure out a way to get into the zone. Our radios can't communicate to civilian ground radios, so we ended up landing near them to offer them a hand; we landed on the road about seven miles from the crash site. I sent my crew chief out to speak with them. They were all civilian authorities, and they were concerned about going into a live range, so they were going to wait until Fed Fire showed up. So we took off and climbed up to get in touch with El Centro Tower; we asked them to get us an ETA on Fed Fire.

At this point, we noticed some ground units at the wreckage; we had no idea where they had come from. They had white Ford Expeditions with light bars; we thought maybe they were Fed Fire. We flew over and landed near where the 53s had landed but a bit closer, maybe 100 yards from the crash; I felt bad making my guys walk that far in the heat. I had my crew chiefs hop out to speak with them. They were not Fed Fire; it is still unclear to me who they were. They seemed like maybe a volunteer group; their hats said "El Centro Ground Search and Rescue." They had found an ID and asked if we wanted to take it; I have no idea how they found it. We didn't take it. We asked if they were taking over the scene, and they said no.

w

David is truthful so help me God

Name)

Sworn to before me this date.

22 Aug 22
Date

1330
Time

Enclosure (75)

(Investigator's name)

Date

Time

Enclosure (75)



UNITED STATES MARINE CORPS
MARINE HEAVY HELICOPTER SQUADRON 466
MARINE AIRCRAFT GROUP 16
PO BOX 452064
SAN DIEGO CA 92145-2064



Wednesday, June 8, 2022 (22159)

KNKX DUTIES				LPOD: TBD							
SDO:				KNKX FIELD HOURS	0830-0100			SCHEDULED	JUN	QTR	FY
SDC:				KNKX QUIET HOURS	NONE			CH-53E	8 12.0	21.3 / 232	274.9 / 625
AM ODO:								Total	8 12.0	ACT / FCST	1381.5 / 2755
PM ODO:										ACT / FCST	ACT / FCST
SKED:											
SKED U/T:											

ENVIRONMENTAL REPORT

ICAO	BMNT	SUNRISE	SUNSET	EENT	MOONRISE	MOONSET	%ILLUM	LLL	HLL
KNKX	0437	0540	1956	2059	1351	0149	55%	0116-0421	0421-0437, 2059-0153*

FLIGHTS

EVENT	TMS	CALLSIGN	BRF/ETD/ETA	ICAO	CREW	T&R	TMR	MSN	SBTP	NOTES	PRI
4301	CH-53E	WK 01	0700/TBD/TBD	KNKX/KNKX	I		2K2	FCF / FCPUT	0/0.0	F: 1	
4302	CH-53E	WK 02	0700/TBD/TBD	KNKX/KNKX	I		2K2	FCF / FCPUT	0/0.0	F: 1	
4303	CH-53E	WK 03	1200/TBD/TBD	KNKX/KNKX	II		2K2	FCF / FCPUT	0/0.0	F: 1	
4311 S.T.X	CH-53E	WK 11	0700/1000/1600	KNKX/KNKX		2211, 2311, 2810, 4981 2211, 2311, 2810, 4981X 2105, 2211, 2311, 4811, 4981 2105, 2211, 2311, 4810X, 4811X, 4981 2105, 2211, 2311, 2813X	1A9	CAL/TERF/ADGR/AG	4/6.0	F: 2,3 R: 1,2 O: 1	1
4312 S.T.X	CH-53E	WK 12	0700/1000/1600	KNKX/KNKX		2211, 2311, 2810, 4981X 2211, 2311, 2810, 4981 2211, 2311, 2810, 4981 2105, 2211, 2311, 4811, 4981 2105, 2211, 2311, 2813X 2105, 2211, 2311, 2812X, 2813X	1A9	CAL/TERF/ADGR/AG	4/6.0	F: 2-4 R: 1,2 O: 2	2

NO SIMULATORS SCHEDULED

FLIGHT NOTES:											
1. EVENT TO LOG APPROPRIATE RCPUT CODES AT COMPLETION OF EVENT. POC: OPS.											
2. EVENTS TO LOG 4240 FOR SSGT DODD AFTER THE FLIGHT. POC: EATM.											
3. EVENTS TO BE EQUIPPED WITH FARE KITS FOR MAIN LINE ADGR. POC: OPS.											
4. ODO TO COVER ON SDO RESPONSIBILITIES WHILE SDO IS FLYING. POC: OPS											
RANGE NOTES:											
1. 1100-1200: L2 BULL REQUESTED. POC: RFMS.											
2. 1200-1400: MT BARROW RESERVED. HMH-462 OPERATING AT L2 BULL 1200-1600. POC: RFMS.											
ORDNANCE NOTES:											
1. EVENT TO BE EQUIPPED WITH 3 X GAU 21s AND 3000 ROUNDS.											
2. EVENT TO BE EQUIPPED WITH 3 X GAU-21s AND 2100 ROUNDS.											

GENERAL NOTES:											
1. 0700-0730: FOD WALK IN THE HANGAR FOR ALL AVAILABLE PERSONNEL. MAINTENANCE MEETING IN MAINTENANCE CONTROL FOR DESIGNATED PERSONNEL. POC: MAINTENANCE CONTROL.											
2. 1000-1100: CAL FIRE CLASS AT MAG-16 AUDITORIUM. ALL AVAILABLE AIRCREW TO ATTEND. POC: MAG-16 OPS.											
3. 1145-1200: DAILY HUDDLE IN THE CO'S OFFICE FOR DESIGNATED PERSONNEL. POC: CO.											
4. 1200-1300: CGRI PROGRAM MANAGERS MEETING IN THE READY ROOM. ALL PROGRAM MANAGERS TO ATTEND. POC: XO.											
5. 1300-1400: FRAG CONFERENCE IN THE MAG-16 CONFERENCE ROOM. PTO TO ATTEND. POC: PTO.											
6. 1400-1500: STAN/AFC/HFC IN THE READY ROOM FOR DESIGNATED PERSONNEL. POC: DOSS.											
7. 1500-1600: AOM IN THE READY ROOM FOR ALL OFFICERS. POC: CO.											
8. 1900: HAIL AND FAREWELL AT BALLAST POINT MIRA MESA. ALL OFFICERS TO ATTEND. POC:											

QUESTIONS OF THE DAY:											
EP: Q: MAIN GEARBOX TO ACCESSORY GEARBOX DRIVE SHAFT FAILURE.											
A: *1 APP - START *2 LAND AS SOON AS POSSIBLE.											
NATOPS: Q: AFTER THE GENERATORS ARE TURNED ON, THE BIM CAUTION LIGHT MAY BE ILLUMINATED FOR AS LONG AS ___ MINUTES.											
A: 2.											
TACTICS: Q: WHAT ARE FIVE CHARACTERISTICS OF 2ND GENERATION MANPADS?											
A: 1. COOLING INDUCTORS 2. OPERATES IN THE MID-IR SPECTRUM (3µm - 5µm). 3. ALL ASPECT CAPABLE. 4. USES CONICAL SCAN. 5. NO IRCCM.											
OPS	MAINT	DOSS	XO								



HELICOPTER SEA COMBAT SQUADRON THREE
NAVAL A R STATION, NORTH ISLAND
PO BOX 357122
SAN DIEGO, CA 92135-7122
HSC-3 FLIGHT SCHEDULE
EL CENTRO DETACHMENT
Wednesday, 08 June 2022 (2159)
AIRFIELD HOURS 0630 – 2300



DDO
ADDO:

SUNRISE: 0541
SUNSET: 1956
MOONRISE: 1352
MOONSET: 0149
ILLUM: 57%
EENT: 2059

ELINT: 2039

AC	EVENT #	TIMES BRF/LCH/LND	HAC CREWCHIEF	COPILOT SECONDCREW	MISSION	TMR	X COUNT			DAY HRS	NT HRS	CONFIG FUEL NOTES	HOURS FLOWN	STATUS
							P	O	A					
*** DET 1 ***														
	1	0700 / 0930 / 1430	REUTHER Arvidson		TAE 1 01 TAE 1 01 Tae 1 02 Tae 1 02 Tae 1 02	1E1	2	0	3	5 0	0 0	T1 / C5L 3700 1, 3, 4		
	2	1300 / 1500 / 2000	PIERCE Borkowski		TAE 1 03 IUT 2 35 Tae 1 03	1E1	1	1	1	5 0	0 0	T1 / C4 3700 1, 2, 3		
*** DET 2***														
	3	0900 / 1130 / 1430	RILEY Ramirez		TAE 1 01 Tae 1 02 Tae 1 02 Tae 1 02	1E1	1	0	3	3 0	0 0	A1 / C5L 3700 1, 3		
	4	1300 / 1500 / 2000	GRAY Munoz		TAE 1 03 TAE 1 03 Tae 1 03 Tae 1 03	1E1	2	0	2	5 0	0 0	T1 / C5L 3700 1, 2, 3		

NOTES ALL FLIGHTS LCH/LND KNJK IN MH60S UNLESS OTHERWISE NOTED
CODE: H-60/A, TAS 90 KNOTS
Bold type indicates priority mission
(*) Member on schedule multiple times
(#) Member has less than 10 flight hours within the last 30 calendar days
(+) Requalification Flight

DAILY SUMMARY	6	1	9	18 0	0 0	18 0
CAT 1 X's	6		9	DAY HRS	NT HRS	TOTAL HRS
IUT X's	0	1	0			

- Requires Post Terf
- Dual ship flight is the mission lead
- Carrizo East reserved 0800-2230
- Water Boy Report at 0900 for first launch

GROUND EVENTS

TIME	EVENT	NAMES	LOCATION
1030	GAU-21 Practical		Hangar

SUBMITTED BY:

REVIEWED BY:

APPROVED BY:

DET SCHEDULES

DET OPS

DET OIC

Enclosure (77)

CV-22 Fleet Cleared to Start Flying Again After Safety Stand Down

Sept. 2, 2022 | By [Greg Hadley](#)

After a little more than two weeks, the Air Force's CV-22s have been cleared to fly again.

Air Force Special Operations Command has ended its stand down for the Osprey, which began Aug. 16 [in response to a safety issue](#), Lt. Col. Rebecca Heyse, director of AFSOC public affairs, confirmed to Air Force Magazine on Sept. 2. Breaking Defense first reported the end of the grounding.

The stand down began Aug. 16 after two incidents of "hard clutch engagement" in the course of six weeks.

Hard clutch engagement involves the clutch that connects the rotor gear box to the engine slipping, then catching hard, causing the aircraft to lurch.

Prior to those two incidents, AFSOC's Ospreys had only experienced hard clutch engagement twice in the last five years. No injuries were reported as a result of the incidents, but the Ospreys did have to land immediately after them.

AFSOC has still not identified the root cause of the issue, Heyse told Air Force Magazine in a statement. But the major command has developed mitigation guidelines to deal with instances of hard clutch engagement and is working on multiple lines of effort to address the problem.

Specifically, the new guidelines are focused on flight operations like the ones where most of the incidents took place. The guidelines include:

- Modifying takeoff techniques.
- Including squadron leaders in risk mitigation discussions for operations at higher risk of such incidents.
- Incorporating and modifying scenarios of hard clutch engagement in [simulator training](#).
- Increased training for marginal flight power and aborted takeoffs.

“Until a root cause is identified, and solution implemented, the focus is on mitigating operations in flight regimes where HCEs are more prevalent and ensuring our aircrews are trained as best as possible to handle HCEs when they do occur,” Heyse said.

In addition to the mitigation guidelines, AFSOC has also given its CV-22 crews surveys, both to assess their understanding of what to do in instances of hard clutch engagement, and to allow them to submit feedback or potential solutions for the problem.

Maintainers are also conducting one-time inspections to verify and compare data in the Air Force maintenance information system, so that accurate information “in regards to drivetrain component operating times” is being provided to the CV-22 Joint Program Office and Bell Textron, the aircraft’s maker.

As part of a medium-term effort, AFSOC is also considering replacing drivetrain components after they reach a certain number of flight hours. The long-term goal remains to identify the root cause of the incidents and figure out a materiel solution.

AFSOC Grounds CV-22 Osprey Fleet Over Safety Issue

Aug. 17, 2022 | By [Greg Hadley](#)

Air Force Special Operations Command grounded its [CV-22 Osprey](#) fleet Aug. 16 as part of a safety stand down, with no timeline set for the aircraft to begin flying again, the command confirmed to Air Force Magazine.

The stand down, ordered by AFSOC commander Lt. Gen. James C. "Jim" Slife, comes after two incidents of "hard clutch engagement" in the past six weeks, AFSOC spokesperson Lt. Col. Rebecca Heyse said in an emailed statement.

News of the stand down was first reported by Breaking Defense.

Hard clutch engagement involves the clutch connecting the rotor gear box to the engine slipping, then catching hard, causing the aircraft to lurch.

The two incidents in the past six weeks came after two in the previous five years, Heyse said. No injuries have been reported as a result of the incidents, "due in large part to the skill and professionalism of our Air Commandos who operate the CV-22," Heyse said.

AFSOC hadn't yet gathered enough engineering data analysis to identify the cause of the issue, "so it's unknown if it's mechanical, design, software or some combination of any of those," Heyse said.

And until a root cause is determined and risk control measures are put in place, "no AFSOC CV-22s will fly," she said. Ultimately, "the goal is to determine a viable long term materiel solution," she added.

The Marine Corps and Navy both operate their own versions of the Osprey, and AFSOC has been in contact with Naval Air Systems Command about the issue, Heyse said, deferring comment on any stand down of those aircraft to the respective services.

AFSOC has more than 50 Ospreys in its fleet, based out of Cannon Air Force Base, N.M., Hurlburt Field, Fla., Kirtland Air Force Base, N.M., RAF Mildenhall, U.K., and Yokota Air Base, Japan. The CV-22's [tiltrotor design](#) allows it to take off and land vertically but pivot its engines forward for higher-speed and longer-range horizontal flight.

The aircraft has [generated controversy](#) with its safety record, however. Within the past six months, nine Marines have died in two separate crashes on board the MV-22 Osprey.

The CV-22's stand down marks the second such grounding of Air Force planes in recent weeks, as Air Combat Command just recently cleared its F-35As to begin flying again after conducting inspections for a faulty ejection seat part.

USMC MV-22 Consolidated HAZREPS

EVENT_DATE	EVENT_CATG	EVENT_CLASSN
6/10/2000 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
6/24/2000 12:00:00 AM	GROUND	GRND HZ: GENERAL
8/24/2000 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/20/2000 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/10/2000 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/31/2005 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/1/2005 12:00:00 AM	GROUND	GRND HZ: GENERAL
10/19/2005 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
3/15/2006 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/17/2006 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
6/16/2006 12:00:00 AM	GROUND	GRND HZ: GENERAL
9/19/2006 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/12/2006 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/26/2006 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
1/9/2007 12:00:00 AM	GROUND	GRND HZ: GENERAL
2/28/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/6/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/8/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/29/2007 12:00:00 AM	GROUND	GRND HZ: GENERAL
4/24/2007 12:00:00 AM	FLIGHT	FLT HZ: ATC
5/10/2007 12:00:00 AM	GROUND	GRND HZ: GENERAL
6/15/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
6/26/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/10/2007 12:00:00 AM	GROUND	GRND HZ: GENERAL
7/10/2007 12:00:00 AM	GROUND	GRND HZ: GENERAL
7/11/2007 12:00:00 AM	GROUND	GRND HZ: GENERAL
8/1/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
8/14/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/19/2007 12:00:00 AM	FLIGHT	FLT HZ: ATC
9/28/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/6/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/15/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/19/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/20/2007 12:00:00 AM	GROUND	GRND HZ: GENERAL
11/29/2007 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/11/2008 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/26/2008 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
5/26/2008 12:00:00 AM	GROUND	GRND HZ: GENERAL
5/29/2008 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
6/12/2008 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
8/28/2008 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/7/2008 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/19/2008 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/22/2008 12:00:00 AM	GROUND	GRND HZ: GENERAL
11/19/2008 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/22/2008 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/28/2008 12:00:00 AM	GROUND	GRND HZ: GENERAL
12/4/2008 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
12/17/2008 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
2/2/2009 12:00:00 AM	GROUND	GRND HZ: GENERAL
2/12/2009 12:00:00 AM	GROUND	GRND HZ: GENERAL
2/17/2009 12:00:00 AM	GROUND	GRND HZ: GENERAL
3/13/2009 12:00:00 AM	GROUND	GRND HZ: GENERAL
3/18/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL

3/20/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/21/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/11/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/29/2009 12:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
5/8/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
6/25/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/5/2009 12:00:00 AM	FLIGHT	FLT HZ: ATC
7/6/2009 12:00:00 AM	FLIGHT	FLT HZ: ATC
7/8/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/9/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/17/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/18/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/19/2009 12:00:00 AM	FLIGHT	FLT HZ: ATC
9/1/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/16/2009 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
9/17/2009 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/28/2009 12:00:00 AM	GROUND	GRND HZ: GENERAL
12/1/2009 12:00:00 AM	GROUND	GRND HZ: GENERAL
12/2/2009 12:00:00 AM	FLIGHT	FLT HZ: ATC
1/27/2010 12:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
3/4/2010 12:00:00 AM	GROUND	GRND HZ: GENERAL
3/8/2010 12:00:00 AM	GROUND	GRND HZ: GENERAL
3/11/2010 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/15/2010 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/19/2010 12:00:00 AM	GROUND	GRND HZ: GENERAL
4/28/2010 12:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
5/31/2010 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
6/3/2010 12:00:00 AM	GROUND	GRND HZ: GENERAL
6/10/2010 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/13/2010 12:00:00 AM	GROUND	GRND HZ: GENERAL
EVENT_DATE	EVENT_CATG	EVENT_CLASSN
12/14/2010 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/7/2011 3:00:00 AM	GROUND	GRND HZ: GENERAL
8/16/2011 12:00:00 AM	FLIGHT	FLT HZ: ATC
10/5/2011 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/13/2011 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
11/4/2011 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/8/2011 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
12/6/2011 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
12/18/2011 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
2/16/2012 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
2/27/2012 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/16/2012 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/4/2012 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/29/2012 3:30:00 PM	GROUND	GRND HZ: GENERAL
5/2/2012 12:00:00 AM	GROUND	GRND HZ: GENERAL
6/19/2012 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
8/8/2012 3:30:00 PM	FLIGHT	FLT HZ: GENERAL
9/26/2012 12:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
10/3/2012 12:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
10/12/2012 3:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
10/23/2012 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/27/2012 6:19:09 AM	GROUND	GRND HZ: GENERAL
1/31/2013 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/9/2013 1:00:00 AM	GROUND	GRND HZ: GENERAL

4/3/2013 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/5/2013 11:00:00 AM	GROUND	GRND HZ: GENERAL
4/19/2013 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
5/21/2013 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
5/23/2013 12:00:00 AM	GROUND	GRND HZ: GENERAL
7/2/2013 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/16/2013 12:00:00 AM	GROUND	GRND HZ: GENERAL
8/10/2013 3:30:00 PM	GROUND	GRND HZ: GENERAL
8/28/2013 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/13/2013 3:30:00 PM	FLIGHT	FLT HZ: GENERAL
9/27/2013 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/7/2013 6:00:00 PM	FLIGHT	FLT HZ: GENERAL
10/14/2013 11:00:00 AM	GROUND	GRND HZ: GENERAL
10/15/2013 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/4/2013 6:00:00 PM	FLIGHT	FLT HZ: GENERAL
11/13/2013 2:30:00 PM	FLIGHT	FLT HZ: GENERAL
11/16/2013 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/17/2013 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/21/2013 6:00:00 PM	FLIGHT	FLT HZ: GENERAL
11/25/2013 10:00:00 AM	GROUND	GRND HZ: GENERAL
12/2/2013 4:00:00 PM	FLIGHT	FLT HZ: GENERAL
12/11/2013 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
1/22/2014 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
1/25/2014 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
2/10/2014 12:00:00 AM	GROUND	GRND HZ: GENERAL
2/14/2014 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
2/20/2014 10:00:00 AM	FLIGHT	FLT HZ: PHYS EPISODE
3/1/2014 10:00:00 AM	GROUND	GRND HZ: GENERAL
3/12/2014 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/16/2014 5:00:00 PM	FLIGHT	FLT HZ: GENERAL
3/19/2014 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/21/2014 11:00:00 AM	GROUND	GRND HZ: GENERAL
3/24/2014 5:00:00 PM	FLIGHT	FLT HZ: GENERAL
3/25/2014 2:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
4/1/2014 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
5/20/2014 11:00:00 AM	GROUND	GRND HZ: GENERAL
6/4/2014 11:00:00 AM	FLIGHT	FLT HZ: ATC
6/24/2014 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/16/2014 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/29/2014 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
8/6/2014 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
8/19/2014 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/3/2014 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/7/2014 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/11/2014 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/18/2014 12:00:00 AM	GROUND	GRND HZ: GENERAL
9/26/2014 1:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/29/2014 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/30/2014 1:00:00 AM	GROUND	GRND HZ: GENERAL
10/5/2014 6:00:00 PM	FLIGHT	FLT HZ: GENERAL
10/8/2014 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/22/2014 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/23/2014 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/25/2014 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
12/3/2014 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK

12/8/2014 10:00:00 AM	GROUND	GRND HZ: GENERAL
12/10/2014 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
1/8/2015 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
1/29/2015 3:00:00 AM	GROUND	GRND HZ: GENERAL
2/5/2015 12:30:00 PM	FLIGHT	FLT HZ: GENERAL
2/12/2015 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
2/20/2015 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/7/2015 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/13/2015 5:00:00 PM	FLIGHT	FLT HZ: GENERAL
6/10/2015 5:00:00 PM	GROUND	GRND HZ: GENERAL
6/13/2015 12:00:00 PM	FLIGHT	FLT HZ: GENERAL
6/17/2015 6:00:00 PM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
7/17/2015 5:00:00 PM	FLIGHT	FLT HZ: GENERAL
7/27/2015 5:00:00 PM	FLIGHT	FLT HZ: GENERAL
7/31/2015 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
8/5/2015 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
8/21/2015 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
9/16/2015 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/26/2015 5:00:00 PM	FLIGHT	FLT HZ: GENERAL
10/7/2015 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
10/8/2015 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
10/14/2015 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/24/2015 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/6/2015 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
12/1/2015 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
12/13/2015 3:00:00 PM	FLIGHT	FLT HZ: GENERAL
2/22/2016 1:00:00 AM	FLIGHT	FLT HZ: GENERAL
2/23/2016 3:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
4/24/2016 11:00:00 AM	GROUND	GRND HZ: GENERAL
5/21/2016 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
5/24/2016 12:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
6/10/2016 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
6/14/2016 11:00:00 AM	GROUND	GRND HZ: GENERAL
6/29/2016 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
7/27/2016 5:00:00 PM	GROUND	GRND HZ: GENERAL
8/11/2016 6:00:00 PM	FLIGHT	FLT HZ: GENERAL
8/23/2016 3:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
8/24/2016 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
8/25/2016 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/19/2016 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/1/2016 3:00:00 AM	GROUND	GRND HZ: GENERAL
10/3/2016 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/25/2016 5:00:00 PM	GROUND	GRND HZ: GENERAL
10/26/2016 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/2/2016 3:00:00 AM	GROUND	GRND HZ: GENERAL
11/8/2016 3:00:00 AM	GROUND	GRND HZ: GENERAL
12/8/2016 4:00:00 PM	FLIGHT	FLT HZ: GENERAL
12/12/2016 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
12/21/2016 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
1/13/2017 4:00:00 PM	FLIGHT	FLT HZ: GENERAL
1/22/2017 4:00:00 PM	GROUND	GRND HZ: GENERAL
1/27/2017 12:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
3/1/2017 12:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
3/28/2017 3:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
4/3/2017 12:00:00 AM	GROUND	GRND HZ: GENERAL

4/5/2017 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/16/2017 6:00:00 PM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
4/19/2017 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/19/2017 5:00:00 PM	GROUND	GRND HZ: GENERAL
4/20/2017 5:00:00 PM	GROUND	GRND HZ: GENERAL
4/30/2017 5:00:00 PM	FLIGHT	FLT HZ: GENERAL
5/22/2017 11:00:00 AM	GROUND	GRND HZ: GENERAL
5/24/2017 5:00:00 PM	FLIGHT	FLT HZ: GENERAL
6/1/2017 12:00:00 AM	GROUND	GRND HZ: GENERAL
7/6/2017 5:00:00 PM	FLIGHT	FLT HZ: GENERAL
7/11/2017 12:00:00 AM	GROUND	GRND HZ: GENERAL
7/20/2017 12:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
8/1/2017 10:30:00 AM	FLIGHT	FLT HZ: GENERAL
8/9/2017 12:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
8/15/2017 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/3/2017 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/27/2017 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
9/29/2017 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/7/2017 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/19/2017 2:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/21/2017 2:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/17/2017 12:00:00 AM	GROUND	GRND HZ: GENERAL
11/20/2017 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/29/2017 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
1/15/2018 6:00:00 PM	FLIGHT	FLT HZ: GENERAL
1/20/2018 4:00:00 PM	FLIGHT	FLT HZ: GENERAL
2/1/2018 7:00:00 PM	GROUND	GRND HZ: GENERAL
2/8/2018 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
2/13/2018 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
2/21/2018 3:00:00 AM	GROUND	GRND HZ: ATC
3/1/2018 3:00:00 AM	FLIGHT	FLT HZ: ATC
3/29/2018 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
6/13/2018 10:30:00 AM	FLIGHT	FLT HZ: GENERAL
6/27/2018 3:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
7/12/2018 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/30/2018 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
8/3/2018 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/26/2018 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/7/2018 10:00:00 AM	FLIGHT	FLT HZ: GENERAL
2/11/2019 4:00:00 PM	GROUND	GRND HZ: GENERAL
3/23/2019 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/28/2019 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
4/4/2019 12:00:00 AM	GROUND	GRND HZ: GENERAL
4/13/2019 8:00:00 PM	FLIGHT	FLT HZ: GENERAL
5/21/2019 11:00:00 AM	FLIGHT	FLT HZ: GENERAL
6/3/2019 12:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
6/28/2019 10:36:33 PM	GROUND	GRND HZ: GENERAL
7/21/2019 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/24/2019 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/25/2019 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
8/20/2019 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
8/22/2019 3:00:00 AM	GROUND	GRND HZ: GENERAL
10/2/2019 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
10/10/2019 3:00:00 AM	FLIGHT	FLT HZ: BIRD/ANIMAL STK
10/22/2019 3:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR

10/28/2019 8:18:12 PM	FLIGHT	FLT HZ: GENERAL
10/30/2019 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/5/2019 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
11/6/2019 2:57:30 PM	GROUND	GRND HZ: GENERAL
11/17/2019 10:00:00 AM	FLIGHT	FLT HZ: ATC
12/14/2019 3:00:00 AM	GROUND	GRND HZ: GENERAL
1/7/2020 12:00:00 AM	FLIGHT	FLT HZ: GENERAL
1/17/2020 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
1/22/2020 3:00:00 AM	GROUND	GRND HZ: GENERAL
1/23/2020 12:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
2/11/2020 3:00:00 AM	FLIGHT	FLT HZ: NEAR MID-AIR
3/4/2020 5:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/18/2020 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
3/24/2020 3:00:00 AM	GROUND	GRND HZ: GENERAL
3/27/2020 12:00:00 AM	GROUND	GRND HZ: GENERAL
4/2/2020 5:00:00 PM	GROUND	GRND HZ: GENERAL
5/11/2020 12:00:00 AM	GROUND	GRND HZ: GENERAL
5/13/2020 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
5/31/2020 5:00:00 PM	FLIGHT	FLT HZ: GENERAL
6/3/2020 6:00:00 AM	FLIGHT	FLT HZ: GENERAL
6/10/2020 3:00:00 AM	FLIGHT	FLT HZ: GENERAL
7/9/2020 5:00:00 PM	GROUND	GRND HZ: GENERAL
7/21/2020 11:00:00 AM	GROUND	GRND HZ: GENERAL
DATE_LONG	SUBCAT_TIER1_DESC	MISHAP_TYPE_TIER1_DESC
12/12/2019 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
1/29/2020 12:00:00 AM	Aircraft Flight	Airfield Operations
2/20/2020 12:00:00 AM	Aircraft Ground Operations	System Failure or Malfunction (Non-Powerplant)
3/25/2020 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
5/5/2020 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
7/16/2020 12:00:00 AM	Aircraft Ground Operations	Cabin & Cargo
7/20/2020 12:00:00 AM	Aircraft Flight	Laser Strike
7/27/2020 12:00:00 AM	Aircraft Flight	Ship-Related/Embarked Landing
8/7/2020 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
8/12/2020 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
8/25/2020 12:00:00 AM	Aircraft Ground Operations	Other
9/22/2020 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
9/23/2020 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
9/24/2020 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
9/29/2020 12:00:00 AM	Aircraft Flight	Fire/Explosion
10/2/2020 12:00:00 AM	Aircraft Flight	Powerplant Failure or Malfunction
10/7/2020 12:00:00 AM	Aircraft Flight	Ship-Related/Embarked Landing
10/8/2020 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
10/15/2020 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
10/23/2020 12:00:00 AM	Aircraft Ground Operations	Other
10/25/2020 12:00:00 AM	Aircraft Flight	Other
10/28/2020 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
10/29/2020 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
11/2/2020 12:00:00 AM	Aircraft Flight	Wildlife Strike
11/9/2020 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
11/13/2020 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
11/17/2020 12:00:00 AM	Aircraft Flight	Near Midair Collision (NMAC)
11/18/2020 12:00:00 AM	Aircraft Flight	Fire/Explosion
11/23/2020 12:00:00 AM	Aircraft Flight	Smoke & Fumes
12/1/2020 12:00:00 AM	Aircraft Flight	Other
12/12/2020 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)

12/14/2020 12:00:00 AM	Aircraft Flight	Whiteout/Brownout
12/17/2020 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
12/20/2020 12:00:00 AM	Aircraft Flight	Fuel-Related
12/24/2020 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
1/6/2021 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
1/13/2021 12:00:00 AM	Aircraft Flight	Foreign Object Damage
1/20/2021 12:00:00 AM	Aircraft Ground Operations	Other
1/22/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
1/29/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
1/30/2021 12:00:00 AM	Aircraft Flight-Related	System Failure or Malfunction (Non-Powerplant)
2/2/2021 12:00:00 AM	Aircraft Flight	Other
2/8/2021 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
2/10/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
3/1/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
3/4/2021 12:00:00 AM	Aircraft Ground Operations	Other
3/8/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
3/11/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
3/19/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
3/23/2021 12:00:00 AM	Aircraft Flight	Hazardous Air Traffic Report
3/27/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
3/29/2021 12:00:00 AM	Aircraft Flight	Other
3/31/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
4/1/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
4/7/2021 12:00:00 AM	Aircraft Flight	Near Midair Collision (NMAC)
4/19/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
5/3/2021 12:00:00 AM	Aircraft Ground Operations	Fire/Explosion
5/11/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
5/12/2021 12:00:00 AM	Aircraft Flight	Laser Strike
5/17/2021 12:00:00 AM	Aircraft Flight	Wildlife Strike
5/21/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
5/28/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
6/5/2021 12:00:00 AM	Aircraft Flight	Cabin & Cargo
6/7/2021 12:00:00 AM	Aircraft Ground Operations	Foreign Object Damage
6/23/2021 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
6/25/2021 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
6/26/2021 12:00:00 AM	Aircraft Ground Operations	Other
7/9/2021 12:00:00 AM	Aircraft Flight	Wildlife Strike
7/12/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
7/23/2021 12:00:00 AM	Aircraft Ground Operations	Other
7/26/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
8/3/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
8/4/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
8/12/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
8/20/2021 12:00:00 AM	Aircraft Ground Operations	System Failure or Malfunction (Non-Powerplant)
8/23/2021 12:00:00 AM	Aircraft Flight	Other
8/26/2021 12:00:00 AM	Aircraft Ground Operations	Fire/Explosion
9/9/2021 12:00:00 AM	Aircraft Ground Operations	Ship-Related/Embarked Landing
9/13/2021 12:00:00 AM	Aircraft Ground Operations	Other
9/23/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
9/24/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
9/25/2021 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
9/27/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
9/28/2021 12:00:00 AM	Aircraft Flight	Insufficient Power
10/14/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
10/17/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft

10/25/2021 12:00:00 AM	Aircraft Ground Operations	Cabin & Cargo
10/28/2021 12:00:00 AM	Aircraft Flight	Other
11/2/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
11/15/2021 12:00:00 AM	Aircraft Flight	Wildlife Strike
11/16/2021 12:00:00 AM	Aircraft Flight	Other
11/18/2021 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
11/23/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
11/26/2021 12:00:00 AM	Aircraft Ground Operations	Other
12/10/2021 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
12/11/2021 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
12/23/2021 12:00:00 AM	Aircraft Flight	Airfield Operations
1/4/2022 12:00:00 AM	Aircraft Flight	Hazardous Air Traffic Report
1/12/2022 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
1/26/2022 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
1/27/2022 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
2/5/2022 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
2/6/2022 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
2/9/2022 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)
2/11/2022 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
2/13/2022 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
2/15/2022 12:00:00 AM	Aircraft Flight	Things Falling Off Aircraft
2/17/2022 12:00:00 AM	Aircraft Ground Operations	Other
3/18/2022 12:00:00 AM	Aircraft Flight	Controlled Flight Into Terrain
3/29/2022 12:00:00 AM	Aircraft Flight	Environment/Weather
4/22/2022 12:00:00 AM	Aircraft Ground Operations	Ground Handling & Servicing Operations
5/9/2022 12:00:00 AM	Aircraft Flight	System Failure or Malfunction (Non-Powerplant)

USMC MV-22B Class A-C Mishaps

DATE_LONG	CLASS_DESC	MISHAP_TYPE_TIER2_DESC
4/8/2000 12:00:00 AM	A	FLIGHT
12/11/2000 12:00:00 AM	A	FLIGHT
3/27/2006 12:00:00 AM	A	GROUND
11/6/2007 12:00:00 AM	A	FLIGHT
7/7/2011 12:00:00 AM	A	FLTREL
4/11/2012 1:48:49 PM	A	FLIGHT
6/21/2013 12:00:00 AM	A	FLIGHT
8/26/2013 8:53:13 PM	A	FLIGHT
5/19/2014 11:29:24 PM	A	FLTREL
10/1/2014 1:36:30 PM	A	FLIGHT
5/17/2015 12:00:00 AM	A	FLIGHT
12/8/2015 9:00:00 AM	A	FLIGHT
12/12/2016 10:00:00 AM	A	FLIGHT
7/11/2017 7:23:46 PM	A	GROUND
8/5/2017 5:34:33 AM	A	FLIGHT
9/28/2017 3:00:00 AM	A	FLIGHT
5/30/2020 9:37:52 PM	A	GROUND
3/18/2022 12:00:00 AM	A	FLIGHT
6/28/2004 12:00:00 AM	B	FLIGHT
5/26/2005 12:00:00 AM	B	GROUND
10/18/2005 12:00:00 AM	B	FLIGHT
12/7/2006 12:00:00 AM	B	GROUND
8/21/2007 12:00:00 AM	B	FLIGHT
5/27/2009 12:00:00 AM	B	GROUND
6/10/2009 12:00:00 AM	B	FLIGHT
4/1/2011 8:33:58 PM	B	GROUND
6/23/2011 9:59:22 PM	B	FLIGHT
2/14/2013 12:00:00 AM	B	GROUND
12/5/2013 12:00:00 AM	B	FLIGHT
1/16/2015 12:00:00 AM	B	FLIGHT
5/1/2015 3:00:00 AM	B	FLIGHT
3/9/2016 3:00:00 AM	B	GROUND
6/14/2016 12:00:00 AM	B	GROUND
10/26/2016 12:49:34 PM	B	FLIGHT
8/28/2017 1:28:36 PM	B	GROUND
12/13/2017 8:17:44 PM	B	GROUND
1/31/2018 12:00:00 AM	B	GROUND
3/26/2018 7:00:00 PM	B	GROUND
9/16/2018 11:00:00 AM	B	FLIGHT
10/30/2018 11:00:00 AM	B	GROUND
6/12/2019 3:00:00 AM	B	FLIGHT
4/16/2020 3:00:00 AM	B	FLIGHT
8/14/2020 12:27:56 AM	B	FLTREL
12/12/2019 12:00:00 AM	B	Maintenance
7/27/2020 12:00:00 AM	B	No Data
4/19/2021 12:00:00 AM	B	Maintenance

USMC MV-22B Class A-C Mishaps

8/20/2021 12:00:00 AM	B	Airframe Structure
9/25/2021 12:00:00 AM	B	Landing Gear/Skids
2/6/2022 12:00:00 AM	B	Cargo Loading/Unloading
9/8/2005 12:00:00 AM	C	FLIGHT
6/19/2006 12:00:00 AM	C	FLIGHT
10/2/2007 12:00:00 AM	C	FLIGHT
2/5/2008 12:00:00 AM	C	GROUND
3/14/2008 12:00:00 AM	C	GROUND
1/7/2009 12:00:00 AM	C	GROUND
7/18/2009 12:00:00 AM	C	GROUND
3/25/2010 12:00:00 AM	C	FLIGHT
5/18/2010 12:00:00 AM	C	FLIGHT
5/18/2010 12:00:00 AM	C	FLIGHT
7/13/2010 12:00:00 AM	C	FLIGHT
7/21/2010 12:00:00 AM	C	GROUND
12/3/2010 12:00:00 AM	C	GROUND
12/16/2010 12:00:00 AM	C	FLIGHT
12/21/2010 12:00:00 AM	C	FLIGHT
12/25/2010 12:00:00 AM	C	FLIGHT
4/14/2011 12:00:00 AM	C	GROUND
5/2/2011 3:00:00 AM	C	GROUND
7/22/2011 3:30:00 PM	C	GROUND
8/5/2011 12:00:00 AM	C	FLIGHT
8/5/2011 3:45:39 PM	C	FLTREL
8/27/2011 3:30:00 PM	C	GROUND
1/9/2012 2:30:00 PM	C	GROUND
3/25/2012 3:30:00 PM	C	FLIGHT
5/10/2012 12:00:00 AM	C	FLTREL
7/16/2012 3:00:00 AM	C	FLIGHT
7/24/2012 3:00:00 AM	C	FLTREL
8/13/2012 12:00:00 AM	C	GROUND
1/16/2013 3:00:00 AM	C	FLTREL
1/23/2013 11:07:36 PM	C	GROUND
4/17/2013 3:00:00 AM	C	FLIGHT
5/31/2013 3:30:00 PM	C	GROUND
6/15/2013 3:00:00 AM	C	GROUND
7/22/2013 3:30:00 PM	C	GROUND
7/30/2013 3:30:00 PM	C	FLTREL
8/29/2013 3:30:00 PM	C	FLTREL
11/21/2013 12:00:00 AM	C	FLIGHT
12/2/2013 12:00:00 AM	C	GROUND
12/3/2013 12:00:00 AM	C	GROUND
12/28/2013 2:30:00 PM	C	GROUND
2/26/2014 12:00:00 AM	C	GROUND
4/16/2014 3:00:00 AM	C	GROUND
5/7/2014 12:00:00 AM	C	FLIGHT
6/23/2014 6:00:00 PM	C	FLIGHT

USMC MV-22B Class A-C Mishaps

6/26/2014 11:00:00 AM	C	FLIGHT
7/17/2014 12:00:00 AM	C	GROUND
9/24/2014 3:00:00 AM	C	FLIGHT
11/12/2014 3:00:00 AM	C	GROUND
2/22/2015 4:00:00 PM	C	FLIGHT
3/25/2015 3:00:00 AM	C	FLIGHT
4/17/2015 8:22:50 PM	C	FLIGHT
5/20/2015 3:00:00 AM	C	FLIGHT
6/8/2015 12:00:00 AM	C	GROUND
6/26/2015 9:52:20 AM	C	FLIGHT
7/6/2015 12:00:00 AM	C	GROUND
7/17/2015 5:58:27 PM	C	GROUND
7/27/2015 5:00:00 PM	C	FLIGHT
9/29/2015 12:00:00 AM	C	FLIGHT
9/30/2015 3:00:00 AM	C	FLTREL
10/1/2015 5:39:57 PM	C	GROUND
11/6/2015 3:00:00 AM	C	FLIGHT
11/29/2015 3:00:00 AM	C	GROUND
2/23/2016 12:00:00 AM	C	GROUND
3/6/2016 10:00:00 AM	C	FLTREL
4/7/2016 3:00:00 AM	C	GROUND
4/8/2016 7:22:19 PM	C	FLIGHT
4/20/2016 12:00:00 AM	C	FLIGHT
4/21/2016 12:00:00 AM	C	GROUND
5/13/2016 6:00:00 PM	C	GROUND
5/16/2016 5:11:39 PM	C	GROUND
7/26/2016 4:36:56 PM	C	GROUND
8/2/2016 3:00:00 AM	C	FLIGHT
10/3/2016 1:28:06 PM	C	GROUND
11/4/2016 12:00:00 AM	C	GROUND
12/13/2016 12:00:00 AM	C	FLIGHT
1/27/2017 12:00:00 AM	C	FLIGHT
1/29/2017 7:22:13 PM	C	FLIGHT
2/13/2017 12:00:00 AM	C	GROUND
3/3/2017 12:00:00 AM	C	GROUND
3/6/2017 3:00:00 AM	C	GROUND
3/7/2017 3:00:00 AM	C	FLIGHT
3/23/2017 12:00:00 AM	C	FLIGHT
5/15/2017 5:00:00 PM	C	GROUND
5/18/2017 3:00:00 AM	C	FLIGHT
5/31/2017 10:00:00 AM	C	GROUND
6/12/2017 6:00:00 AM	C	GROUND
7/7/2017 12:23:24 PM	C	GROUND
7/12/2017 7:12:16 PM	C	GROUND
7/16/2017 12:00:00 AM	C	FLIGHT
7/25/2017 12:00:00 AM	C	GROUND
7/28/2017 3:00:00 AM	C	GROUND

USMC MV-22B Class A-C Mishaps

9/4/2017 6:00:00 PM	C	GROUND
9/7/2017 11:42:10 AM	C	GROUND
10/16/2017 2:00:00 AM	C	GROUND
11/13/2017 12:00:00 AM	C	GROUND
12/19/2017 12:00:00 AM	C	FLIGHT
2/9/2018 5:56:45 PM	C	FLIGHT
2/15/2018 12:00:00 AM	C	FLIGHT
2/16/2018 3:00:00 AM	C	FLIGHT
3/18/2018 2:00:00 AM	C	GROUND
5/7/2018 3:00:00 AM	C	GROUND
6/2/2018 3:11:16 PM	C	FLIGHT
7/11/2018 11:34:39 PM	C	FLIGHT
7/30/2018 3:00:00 AM	C	FLIGHT
8/13/2018 12:00:00 AM	C	GROUND
10/1/2018 6:00:00 AM	C	GROUND
10/15/2018 6:00:00 AM	C	FLTREL
10/19/2018 4:58:11 PM	C	FLIGHT
11/5/2018 4:00:00 PM	C	GROUND
1/1/2019 5:00:00 PM	C	GROUND
1/28/2019 12:00:00 AM	C	FLIGHT
2/18/2019 4:00:00 PM	C	FLIGHT
4/9/2019 12:00:00 AM	C	FLIGHT
5/5/2019 11:00:00 AM	C	FLIGHT
5/20/2019 5:00:00 PM	C	GROUND
5/30/2019 11:00:00 AM	C	GROUND
8/20/2019 12:00:00 AM	C	FLIGHT
8/30/2019 4:34:47 PM	C	FLIGHT
9/10/2019 6:00:00 AM	C	GROUND
9/12/2019 11:08:59 PM	C	FLIGHT
10/24/2019 6:00:00 AM	C	GROUND
1/15/2020 12:00:00 AM	C	FLIGHT
1/29/2020 3:00:00 AM	C	FLTREL
2/20/2020 12:00:00 AM	C	FLTREL
3/22/2020 12:00:00 AM	C	GROUND
3/25/2020 12:00:00 AM	C	FLIGHT
4/30/2020 12:00:00 AM	C	GROUND
5/5/2020 12:00:00 AM	C	FLIGHT
5/28/2020 12:28:21 PM	C	GROUND
6/4/2020 3:00:00 AM	C	FLIGHT
7/10/2020 12:00:00 AM	C	FLIGHT
2/20/2020 12:00:00 AM	C	Flight Control System
3/25/2020 12:00:00 AM	C	No Data
8/7/2020 12:00:00 AM	C	Maintenance
8/12/2020 12:00:00 AM	C	Maintenance
9/17/2020 12:00:00 AM	C	Airframe Structure
9/24/2020 12:00:00 AM	C	Maintenance
10/2/2020 12:00:00 AM	C	Turboshaft Engine

USMC MV-22B Class A-C Mishaps

10/23/2020 12:00:00 AM	C	No Data
12/1/2020 12:00:00 AM	C	No Data
1/6/2021 12:00:00 AM	C	Airframe Structure
2/10/2021 12:00:00 AM	C	No Data
2/23/2021 12:00:00 AM	C	Other - Air Panel
3/27/2021 12:00:00 AM	C	Other - Mv-22b Blade Fold Wing Stow Operi
3/31/2021 12:00:00 AM	C	Maintenance
5/17/2021 12:00:00 AM	C	No Data
5/28/2021 12:00:00 AM	C	Towing
6/7/2021 12:00:00 AM	C	Other - Shoring Used For Unloading Cargo
6/23/2021 12:00:00 AM	C	Aircraft Electric System
7/26/2021 12:00:00 AM	C	Maintenance
8/20/2021 12:00:00 AM	C	Other - Midwing Gearbox
12/23/2021 12:00:00 AM	C	Maintenance
1/12/2022 12:00:00 AM	C	Towing
2/21/2022 12:00:00 AM	C	Maintenance
3/29/2022 12:00:00 AM	C	Lightning
4/28/2022 12:00:00 AM	C	No Data
5/9/2022 12:00:00 AM	C	Flight Control System



DEPARTMENT OF THE NAVY

NAVAL AIR SYSTEMS COMMAND
RADM WILLIAM A. MOFFETT BUILDING
47123 BUSE ROAD, BLDG 2272
PATUXENT RIVER, MARYLAND 20670-1547

IN REPLY REFER TO

7100
Ser AIR-4.2/021-18
21 August 2018

From: Director (Acting), Cost Department (AIR 4.2)
To: Commander, Naval Safety Center (Code 60)

Subj: AVERAGE AIRCRAFT INVESTMENT COSTS FOR 2018

Ref: (a) DoDI 6055.07, "Mishap Notification, Investigation, Reporting, and Record Keeping," June 6, 2011
(b) NAVAIR ltr 7100 Ser AIR-4.2/025-17 of 21 November 2017

Encl: (1) Aircraft Models and Associated Average Aircraft Investment Costs

1. In compliance with reference (a), enclosure (1) provides the 2018 update to the investment unit values for Navy inventory aircraft. The cost represents the average unit flyaway expressed in current 2018 dollars. Enclosure (1), Table A, supersedes the data provided in reference (b).

2. Questions regarding enclosure (1) may be addressed to [REDACTED], AIR-4.2.1., at DSN [REDACTED] or commercial ([REDACTED])

Copy to:
CNO (N88F)
NAVAIRSYSCOM (AIR-1.1, 1.4)
NSC (Code 65, 612)
NAVICP (Code P0132.33)
NAVICP (Code 0343.14)
CMC (Safety Division (Code SD), Aviation Department (Code APP-2B))

Enclosure (83)

AIRCRAFT MODELS AND ASSOCIATED AVERAGE AIRCRAFT INVESTMENT COSTS

The Acquisition Policy and Processes Department (AIR-1.1) of the Naval Air Systems Command (NAVAIR) has requested AIR-4.2 support in preparing an annual estimate of the investment cost of the aircraft type/model/series currently in the U.S. Navy inventory. Table A provides the revised list of aircraft and estimated investment values for 2018. This listing supersedes data provided by NAVAIR letter 7100 Ser AIR-4.2/025-17 of 21 NOV 2017. The average aircraft investment data contained in this report is primarily used by the Naval Safety Center in estimating aircraft mishap costs. All users of this data must keep in mind that the evaluation process described below does not result in uniformly accurate cost figures; generally the costs for those series still in, or recently in production will be more accurate than data shown for older aircraft.

The estimated values shown in Table A are expressed in Then Year (TY) 2018 budget year dollars in millions (TY\$M). They are derived from the year in which the aircraft was procured/modified (i.e., what the Navy paid in the actual year(s) that the aircraft was bought and modified) then escalated to 2018 TY\$M. For aircraft models procured by contract, historical procurement records were obtained from the NAVAIR (AIR-4.2) Historical Aircraft Procurement Cost Archives and analyzed to determine an overall average value for each aircraft based on unit flyaway costs (i.e., cost of the airframe; contractor and government furnished electronics/avionics; installed engine(s) and engine accessories; armament; ancillary equipment and other government furnished equipment; and associated recurring and non-recurring flyaway costs). The average aircraft value is obtained by dividing the total flyaway costs for a given type/model/series by the total number of aircraft procured. Pre-production and prototype procurements are normally not included in the computations since they are usually not representative in cost of the average inventory aircraft. For aircraft involved in an ongoing procurement or major modification program, the average aircraft value will be reassessed annually until completion of the procurement or modification program.

For aircraft entered into the inventory, as a result of any major modification (e.g., a service life extension program or a conversion in lieu of production program), the average modification cost is added to the unit flyaway cost to obtain the average aircraft value. When available, actual modification costs are used in the computations. Where not readily available, planning factor estimates (developed as a percentage of the flyaway cost from an analysis of historical modification costs) are used to determine an approximate aircraft value. For aircraft models out of production, costs are also adjusted to reflect less than major modifications. Modification costs are applied equally to the entire inventory of a particular series.

Enclosure (83)

Enclosure (1)

Subj: AVERAGE AIRCRAFT INVESTMENT COSTS FOR 2018

The listings of aircraft models in Table A are those types/models/series of aircraft in the inventory on 31 Dec. 2017, for which cost data is available. Current inventory totals for each type/model/series are obtained from the U.S. Navy Total Active Aircraft Inventory database maintained by the OPNAV Director Air Warfare (N88).

For aircraft currently being procured and/or modified, cost data was obtained from the Aircraft Procurement Navy, President's Budget Submission for 2019 (PB19).

Escalation factors used to establish the current year values in Table A are derived from the most recent Global Insight, PPI, Aircraft index by AIR-4.2.

Enclosure (83)

Enclosure (1)

**AVERAGE AIRCRAFT PROCUREMENT INVESTMENT REPORT FISCAL YEAR 2018
FOR OFFICIAL USE ONLY**

Aircraft Models and Associated Average Aircraft Investment Costs 2018

Table A: Unit Flyaway in Then-Year 2018 Dollars (Millions)

AIRCRAFT MODEL	AVERAGE VALUE (\$ MILLIONS)	AIRCRAFT MODEL	AVERAGE VALUE (\$ MILLIONS)
AH-1W	29.4	OH-58C	2.5
AH-1Z	30.9	P-3C	115.7
AV-8B	68.1	P-8A	176.0
C-12C	7.5	RC-12M	.8
C-130T	62.4	RQ-21A*	7.3
C-20G	67.2	RQ-23A	.2
C-26A	.3	RQ-26A	.2
C-26D	2.7	RQ-4A	93.9
C-2A	67.1	RQ-7B*	1.6
C-37A	69.4	SH-60F	34.3
C-37B	66.0	T-34C	3.0
C-38A	.1	T-38C	7.9
C-40A	90.2	T-39D/G/N	14.7
CH-53E	60.4	T-44A/C	7.7
E-2C	133.4	T-45A/C	42.0
E-2D	183.1	T-6A/B	7.4
E-6B	316.9	TAV-8B	80.4
EA-18G	85.3	TE-2C	113.4
EA-6B	137.3	TH-57B/C	3.3
EP-3E	201.5	U-1B	.2
F-16A/B	29.5	U-6A	.9
F-35B/C	157.3	UC-12F	8.6
F-5F	21.0	UC-12M	8.6
F-5N	2.9	UC-12W	6.0
F/A-18A/B	78.8	UC-35	13.2
F/A-18C/D	82.7	UH-1Y	26.1
F/A-18E/F	93.2	UH-3H/D	16.5
HH-1N	8.4	UH-60A	.2
HH-60H	32.6	UH-60L	15.2
KC-130J	87.7	UH-60N	.2
KC-130T	70.6	UH-72A	.2
MH-53E	59.3	VH-3A	.1
MH-60R	39.8	VH-3D	97.3
MH-60S	27.9	VH-60N	94.3
MQ-8B/C	20.3	X-26A	.2
MV-22B	86.7		

Note: All Values are Procurement Investment Cost - Not replacement

* The Average Procurement Investment Cost is what's defined as a "system", however this system consists of more than one air vehicle and in the case of a single air vehicle loss, the referenced POC in this report or the respective PMA should be consulted to determine a reasonable loss value.

Enclosure (83)

Enclosure (1)

Listing of Personnel

Mishap Aircraft 1 (MA1)	MV-22B (168018) / Swift 11
Mishap Pilot 1 (MP1) / Aircraft Commander	Capt N. Losapio
Mishap Co-pilot 1 (MCP1)	Capt J. Sax
Mishap Crew Chief 1a (MCC1a)	Cpl S. Rasmuson
Mishap Crew Chief 1b (MCC1b)	Cpl N. Carlson
Mishap Crew Chief 1c (MCC1c)	LCpl E. Strickland
Mishap Aircraft 2 (MA2)	MV-22B (165943) / Swift 12
Mishap Pilot 2, (MP2) / Aircraft Commander	
Mishap Co-pilot 2 (MCP2)	
Mishap Crew Chief 2a (MCC2a)	
Mishap Crew Chief 2b (MCC2b)	
Mishap Crew Chief 2c (MCC2c)	
Mishap Aircraft 1 SFF Maintenance Controller	
Mishap Aircraft 1 & 2 Aircraft Maintenance Officer	

Wolfpack 11/12

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