

Au Street #1: 1/14/2016 22:34:19

14-01-2016 22:34:19

Au Street #1





Au Street #1: 1/14/2016 22:34:31

14-01-2016 22:34:30

Au Street #1





Au Street #1: 1/14/2016 22:34:25

14-01-2016 22:34:24

Au Street #1



**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Friday, March 25, 2016 15:42  
**To:** (b)(6) (b) (3) 10 USC § 130b  
**Subject:** RE: Crew Positions for PS 31/ 31 14 January  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

Sir,

Pegasus31

Left seat, (b)(6)

Right seat, (b)(6)

Left gun, (b)(6)

Right gun, (b)(6)

Tail, (b)(6)

I am no 100%. (b)(6) were in those positions when I hot seated. I did not see (b)(6) during the hotseat. (b)(6) was notorious for riding the ramp.

-----Original Message-----

**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Friday, March 25, 2016 9:36 AM  
**To:** (b)(6) (b) (3) 10 USC § 130b  
**Cc:** (b)(6) (b) (3) 10 USC § 130b  
**Subject:** Crew Positions for PS 31/ 31 14 January

Good Morning Gentlemen,

I'm cleaning up a few things on the investigation. Would both of you be able to email me back, to the best of your knowledge, the crew positions of your respective aircraft on January 14th 2016?

Left/right pilot seats, left/right gun and tail would be perfect for all 6 pax.

Please say in the email the side number of the aircraft as well.

Thanks for the constant help and please let me know if you need anything.

Hope you guys have a great weekend and a good Friday.

Very Respectfully,

(b)(3) 10 USC



**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Sunday, March 27, 2016 20:07  
**To:** (b)(6) (b) (3) 10 USC § 130b  
**Cc:** (b)(6) (b) (3) 10 USC § 130b  
**Subject:** RE: Crew Positions for PS 31/ 31 14 January

Gentlemen,

Pegasus 32 Aircraft 05.

**Left Seat:** (b)(6)  
**Right Seat:** (b)(6)

For the Crew in the back. I know who was in front, and who was on the tail. I am unsure of which window the crew chiefs had. My indications below are a best guess based off what I remember prior to taxing out.

**Front Cabin:**

(b)(6) (left gun)  
(b)(6) (right gun)

**Tail:**

(b)(6)

Very Respectfully,

(b)(6) (b) (3) 10 USC §

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**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Friday, March 25, 2016 9:35 AM  
**To:** (b)(6) (b) (3) 10 USC § 130b  
**Cc:** (b)(6) (b) (3) 10 USC § 130b  
**Subject:** Crew Positions for PS 31/ 31 14 January

Good Morning Gentlemen,

I'm cleaning up a few things on the investigation. Would both of you be able to email me back, to the best of your knowledge, the crew positions of your respective aircraft on January 14th 2016?

Left/right pilot seats, left/right gun and tail would be perfect for all 6 pax.

Please say in the email the side number of the aircraft as well.

Thanks for the constant help and please let me know if you need anything.

Hope you guys have a great weekend and a good Friday.

Very Respectfully,

(b) (3) 10 US



SUMMARY OF INTERVIEW WITH

(b)(6) (b) (3) 10 USC § 130b

Conducted via telephone 10 February 2016

I work at ALD at

(b)(6) (b) (3) 10 USC § 130b

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

I was a part of two inspections of HMH-463 in 2015. The first was an ALMAT from 31 August - 4 September 2015 to inspect all 39 programs. The second was from 2 - 5 November 2015, to re-inspect all 39 programs based upon the failure of the first inspection.

The in-brief with the command element for the September 2015 inspection was fine, the inspection team was well-received. There were not many questions, I told them I would be doing an out-brief with the (b)(6) (b) (3) 10 USC § 130b on Tuesday, Wednesday and Thursday of the inspection.

I did not brief the CO of the squadron or the MAG until Friday. I did call (b)(6) (b) (3) 10 USC § 130b back at 1MAW ALD on Thursday evening to apprise him of the status of the inspection and that it wasn't going well.

One issue we identified was a room of excess and unaccounted for gear and equipment found out behind the hangar.

The results of the inspection were that 17 programs were on track, 4 needed attention, and 18 were off track. The reaction from the squadron CO when I informed him was stoic; he did not ask many questions. As a result of the inspection, the squadron was shut down for approximately 21 days at the direction of the CG and MAG CO.

The inspection team did not know going in that there would be problems. The team posture was optimistic and objective. We were aware that the squadron had performed very well on a CNAF inspection in November 2014 and also that the HMH-463 personnel had performed well at MRF-D. The results of the CNAF inspection were that 34 programs were on track, 3 that needed more attention, and 2 off track.

When we performed the inspection the first week of September, there was some shock to what was found. Several important programs such as Quality Assurance and Maintenance Control were off track. It wasn't little issues that caused the programs to be off track, we found systemic problems across the board.

HMH-463 had a lot of PCS turnover of experienced and supervisory personnel in summer 2015. However, before we came for the ALMAT, MALS-24 had done a courtesy pre-inspection and the squadron performed well. I think that was in approximately May 2015. ALD mandates that no other

ENCLOSURE (103)



inspections occur within 60 days of our ALMAT inspection; this allows the unit time to address any issues that are previously identified.

A considerable number of the program managers changed out between the MALS and 1st MAW inspections. Readiness numbers had dropped during that period of time as well.

When we returned for the re-inspection in November, we were once again received professionally by the squadron. Negativity from the previous inspection was minimal and not prevalent. I briefed my team that we needed to do another full inspection from the ground up of all 39 programs. I viewed it as an opportunity for them to show us what had been done since the last inspection and for the squadron to show improvement.

It was a very different outcome the second time, they had turned things around. I think the program managers had time to focus efforts on addressing program issues. The result of the re-inspection was only 1 program off track, 4 that needed more attention, and 34 on track.



SUMMARY OF INTERVIEW WITH

(b)(6) (b) (3) 10 USC § 130b

Conducted in person 11 February 2016 at MAG-24

I am currently the (b)(6) (b) (3) 10 USC § 130b. I have held that billet since 4 January 2016. Prior to that I was the Phase Crew Supervisor from 16 July 2015 - 4 January 2016. I PCS'ed here from HMH-466 in summer 2015.

I have 10 years of maintenance experience and 7 years of maintenance control experience on both the CH-53E & D platforms. I hold a CDI rating and I am working on getting my CDQ again. I was twice previously assigned to HMH-463 and a CDQAR on both the CH-53E & CH-53D.

When I arrived to the squadron, morale seemed low. The workload was relatively heavy since we had several aircraft either in phase or coming into the phase window, and multiple long term down aircraft in the hangar. We had challenges because our RBA was down to 2 aircraft and we flew whenever a plane came up.

One month after I joined the unit we were inspected by Wing and failed horribly shutting the squadron down. For weeks everyone was engaged in preparing for the follow-up inspection which didn't help our readiness and caused some additional maintenance issues. During the inspection prep MRF-D returned with four additional aircraft that required a lot of maintenance to get them back up to standards for our maintenance department. Once the re-inspect was over, the squadron was playing catch up again trying to get on top of our maintenance issues so we could start flying again.

We generally do not have a supply problem in the maintenance shop at 463. We do have a problem with losing experienced maintainers and need to constantly be training new arrivals up in order to get them up to standards and ready to perform. We lose experienced Marines to normal rotations, but also to operations such as MRF-D, WTI, RIMPAC and the MEU.

Another issue I noticed upon arriving to the flight line was that there's an extensive amount of MAF's written unnecessarily, and there is apprehension in signing off MAFs due to the lack of experience, understanding, and the fear of being reprimanded for anything and everything.

I am aware of some friction that existed previously between the maintenance leadership and the MC and QA departments. It seemed to me that there was some lingering hypersensitivity from the CDI CDQ

ENCLOSURE (104)

personnel because of the previous experience. This created more MAFs and more work orders unnecessarily. One small example would be performing a 50 Hour inspection of the swashplate H-Links during every daily.

We started to suffer some morale problems when we were told to go 12 hours on / 12 hours off to fix the RBA issues and get more aircraft up for flight operations. I am sure there was some resulting fatigue from working so much over an extended period of time, but everyone seemed to be handling it okay. It seemed to me that there was not a clear picture of what we were attempting to achieve and a plan of how to get there. Our RBA remained stagnant at 1.5-2.5 for over 6 months.

I am aware of the Class C mishap involving an engine that ignited and burned up during routine maintenance. However, I do not know much of the details since I was not in the section at that time.

The squadron was not able to achieve the right balance between maintenance and operations since we always had so many aircraft down for maintenance. Before it was a mentality of "fly 'em if you got 'em" but that resulted in more of the same since those aircraft would come back needing work too.

I see a trend of the incoming SNCO personnel who are supervisors that are not qualified to do their jobs right away because they have been away from the MOS doing B-billets or other missions. In our community, your qualifications and currency with maintenance mean a lot for your credibility and ability to make decisions and supervise.

The two planes that crashed in this incident were in great condition, no pertinent maintenance issues were present. I reviewed there records briefly afterwards and I did not see any issues. This was in part due to the mindset that the birds needed to be in top of the line material condition in order to be up. The crews that were on both of the planes that crashed were solid and had plenty of experience.

I am not aware of anyone who "saw this coming" or was so concerned about our RBA and maintenance issues that they had a safety concern. The Marines are all still focused and are pulling their weight after the incident. There is a good support network for those who need any assistance, and they are encouraged to get it. The work is helping the Marines get their mind off of the mishap.

ENCLOSURE (104)



SUMMARY OF INTERVIEW WITH (b)(6) (b) (3) 10 USC § 130b

Conducted in person 11 February 2016 at MAG-24

I am a (b)(6) (b) (3) 10 USC § 130b. I arrived to the squadron on 31 July 2015. I PCS'ed here from Miramar. I hold the CDI and WTI qualifications.

I was not alarmed at the maintenance issues at 463 when I arrived. I was aware of the AFB for the fuel lines that grounded all aircraft and I thought that was a major factor in our readiness. We also shifted our focus to program management once we failed the CNAF inspection, which lead to some frustration in the shop with not being able to get as much training and limited flight time. At my last squadron in Miramar, it seemed like you could get any qual you needed without issue.

I do not think there was any cultural problem with the maintenance personnel. We did seem to have a gap of experience in the mid-level; we had about half of us with lots of experience and the other half were still very junior. I don't think there was a strained relationship between operations and maintenance. There were times when we were held back by waiting for parts to fix aircraft. I did notice a some issues with MMC making calls about parts that the maintainers didn't agree with.

I thought the timing of the relief of the CO was strange, since we had just turned our readiness issues around. We knew the goal to be get our RBA up to 4 aircraft. We had been working 12 hours on / 12 hours off since around Thanksgiving time. I was at an MAI course when it started and came back to that schedule. I understood that decision to come from the squadron staff, the AMO, maintenance chief, and CO. As a result of working so long, there was some fatigue with the personnel. The challenge at my level was to keep morale high and ensure the new guys didn't think that sort of schedule was normal.

It seemed like we were chasing the schedule due to maintenance issues. We knew that lots of the scheduled flights would not be flown based upon downed aircraft. We had been doing lots of low-light training that week of the mishap. I was pulled off of the mishap flight so that

(b)(6) could get some quals. The entire crew that was on those two aircraft were varsity performers. I was not aware of any significant human factors with any of the personnel on those aircraft. (b)(6)

(b)(6) was non-rec'ed for promotion recently, but that was because he was meritoriously promoted too early before he was ready.

ENCLOSURE (05)

The day of the mishap we had an in-brief with the new CO (b)(6) (b) (3) 10 USC § 130b at 1600 in the theater. I flew the night before until about 0300, so I didn't arrive until about 1345. The flight that night was supposed to go at 1800. I believe they had finished the brief prior to the CO meeting. I was not on the cross country flight, but I am not aware of anyone pushing limits on that flight.

I have tried to think about possible causes for the crash, but I cannot think of any reason it happened. It helps to be back at work and focused on the mission after the mishap. The primary frustration has been that the Marines don't seem to be getting the same frequent updates that the families are getting.

ENCLOSURE



SUMMARY OF INTERVIEW WITH

(b)(6) (b)(3) USC § 130b

Conducted in person 11 February 2016 at MAG-24

I am a (b)(6) (b)(3) 10 USC § 130b I arrived to the squadron in July 2013 when (b)(6) (b)(3) 10 USC § 130b was the CO. I hold the NSI and TRFI qualifications, and I am close to getting the CDI.

When I arrived in 2013 Morale was high. We were getting a lot of flying time and ability to test out for quals on the schedule was good. Back then it was normal to have 8-10 birds up at a given time. There have been ups and downs, I feel like the squadron has been in a bit of a slump for the last year or so. I did not notice a big loss of experience or talent with the PCS season in 2015. I was not aware of any major issues with MMC.

Morale suffered a bit when we went to 12 hours on / 12 hours off last year in order to improve our readiness. Morale was probably toughest in November timeframe. Everyone was still doing their jobs and were professional, but it seemed like we were always there. The goal was to get more birds up, but the light at the end of the tunnel never seemed to be getting any closer. While we were working hard, I saw the CO and the pilots around on the weekends as well. The pilots would grill us food sometimes when we were working.

The timing of the relief of the CO seemed a bit off. I thought he inherited a tough situation with the maintenance and readiness issues. I thought (b)(6) (b)(3) 10 USC § 130b I can see why he was relieved though since it seemed like we were not making improvements with our readiness.

I was on the rifle range the week of the mishap. I was not on the cross country flight to Kona. I did go to Kauai with most of the guys from the incident previously. I was not at the CO in-brief since I was on the range. I was part of the recovery effort starting the next day however.

I am not aware of any significant human factors issues with any of the guys on those flights. They all seemed happy, most were married. All the guys on those aircraft were well trained and good performers.

^ the light at the end of the tunnel never got closer.

□ 12/12 Thanksgiving poor meal

ENCLOSURE (106)

SUMMARY OF INTERVIEW WITH

(b)(6) (b) (3) 10 USC § 130b

Conducted in person 11 February 2016 at MAG-24

I was the (b)(6) (b) (3) 10 USC § 130b from July 2014 through January 2016. I am now the (b)(6) (b) (3) 10 USC § 130b in anticipation of my upcoming retirement from the USMC.

When I PCS'ed here I was surprised at the amount of personnel who were on the paper roster, but were not actually present for duty at a given time. At one point, I think we had 80 on paper, but only 13 were actually present for muster. The others are out TAD, FAP, at PME, or otherwise accounted for elsewhere. This issue seems unique to this squadron and is not something I encountered at previous assignments.

I was surprised at the relief of the CO, even in light of the low RBA and the fact that we had worked 12 on / 12 off for so long without an improvement. I felt like the CO had the pulse of the squadron and was engaged. We understood the goal was to get RBA above 50% and we had a maintenance plan to get healthy. However, with the focus on RBA, we were not paying attention to the programs as much and that resulted in the issues with the 1MAW maintenance inspection failure.

Even after the failed 1MAW maintenance inspection last year, morale was high in the flight line. We knew we had work to do to get more birds in the air, we were focused. But, there was some naturally resulting fatigue from the long hours over a long period.

I was aware of a feeling in the shop that the maintenance control staff would pass things along that the maintainers didn't agree with. It seems like the maintenance meetings may have been too in-depth. But, I was not tracking any big problems in the MC department.

I am aware of the Class C mishap last year involving an engine that ignited and burned up during routine maintenance. I understand the CDQ was looking for leaks in the fuel control and motorized the engine when the igniters were on. I think the CDQ had their stamp pulled. I am not aware of any delay in the reporting of the incident.

The maintenance Marines are good to go. They are well trained and motivated. They made my job easy when I was the flight line chief. We experienced some experience shortfalls during PCS season in 2015, but we were able to account for it without any major issues. We also sent some of our best guys to MRF-D, but that is to be expected.

ENCLOSURE (107)



SUMMARY OF INTERVIEW WITH (b)(6) (b) (3) 10 USC § 130b

Conducted in person 11 February 2016 at MAG-24

I currently serve as the (b)(6) (b) (3) 10 USC § 130. I was previously the (b)(6) (b) (3) 10 USC § (b)(6).

I have noticed that during HMH-463 flight briefs they recycle materials. I know the slides they use cold. De-briefs became worthless because it was always the same thing. I brought this up to the HMH 463 squadron staff previously and they justified it by saying MAWTS-1 said to do it that way. I also took note of the fact that they would use Hueys or Cobras on their flights in order to constitute a Division so they could get the Division checks and qualifications. They said this is due to aircraft availability. This practice dated back prior to (b)(6) (b) (3) 10 USC § 130b arrival as CO.

During the Spring of 2015 I knew they had some personnel challenges on the horizon. However, the extent of the issues that surfaced was surprising because I know some of the officers at the squadron and I believe they are good pilots. Once the AFB about the fuel lines came down, there was a sense in the community that it was going to be tough going for a while. Then when the summer PCS season happened and the MRF-D detachment left, we started seeing some of the readiness issues present.

I knew about the Class-C mishap with the torched engine at 463. It seemed like the reporting was delayed. The information about the maintainers performing undocumented procedures came out during the Aviation Mishap Board investigation. I became aware that there were issues fleet-wide about undocumented procedures being used for engine washes. (b)(6) was the senior member of that Class-C AMB.

I noticed the pressure to get birds up was high. I perceived it coming down from the MAW level. I got the sense that if the RBA report was below 50% that the MAG was getting a call asking about a get-well plan. Once the reports about the 12 hours on / 12 hours off came up, there were discussions about what does that really get you. In other words, can you get more productivity out of the marines simply by working them for longer hours? I heard rumors that the decision for the 12 / 12 came from up the chain of command, but I do not know where it originated.

In December of 2015, we had a site visit from the Assistant Wing Commander and a meeting of the Executive Safety Council where the issues at 463 were discussed. The wing ASO had asked me what was going on over at the squadron regarding the readiness issues. You could

ENCLOSURE (b8)

sense things weren't going well over there across the board. I told (b)(6) (b) (3) 10 USC § 130b that morale was suffering at the squadron.

I got the sense that 463 was chasing X's to get qualifications. It seemed like there was a mindset to get pilots qualified for things like WTI and MRF-D. In my opinion, the staff stretched the grey areas with planning and flight schedules. But, I never thought they had safety issue that would result in a mishap. There were definitely conversations about what was going on over there, but nobody voiced any concerns about something like this incident happening.

After the incident, when I reviewed the records I was of the opinion that the pilots were legally qualified to fly the mission, but they were not as proficient as they should have been. I brought up to the MAG CO and Xo that I wanted to implement new requirements on night flying currency. I recall seeing that some of the pilots involved in the mishap had not flown at night in over 90 days, and all of them were at least 60 days stale. Reviewing the flight plan afterwards it seemed like a pretty aggressive operation to be flying under the circumstances with the CO just having been relieved. It seemed like they maybe should have been concentrating on "blocking and tackling" type fundamentals.

There was a command climate survey done during (b)(6) (b) (3) 10 USC § 130b time as CO that revealed some issues as well. . It didn't seem like there was anyone driving the staff and holding the pieces together. I got the impression that 463 was "loose" across the board, and that they were stuck in the "close fight" rather than having a long term vision for looking ahead and planning forward. That being said, I think (b) (3) 10 USC (b)(6), (b)(3) walked into a worst case scenario when taking command with all the various factors coming together at the same time. I don't think he wanted to admit there were issues or reach out for help. I heard that the direction to work 12 hours on / 12 hours off came from the MAG CO but that does not mean it wasn't directed from higher.

⊗ Instrument waivers are not common.

⊗ Instrument waiver - does

not meet SPNAU 8710.7U



SUMMARY OF INTERVIEW WITH

(b)(6) (b) (3) 10 USC § 130b

10 February 2016

I work at (b)(6) (b) (3) 10 USC § 130b and I am currently a Co-Pilot.

On the night in question I was the PM ODO and was slated to begin my shift at 1530, but I came in early at 1200. I went up to the ready room one hour before my shift IOT conduct turnover with (b)(6) (b) (3) 10 USC § 13, the AM ODO.

On the night of the mishap (b)(6), (b)(3) briefed the TacEx slated for that night. The TacEx called for two helicopters from our squadron to depart base with a notional section of skids. The tactical scenario was to be conducted twice with the first mission being conducted during high light and the second iteration being conducted during low light. The first iteration of the tactical scenario was scheduled to depart at approximately 1945 and it returned to base upon completion at approximately 2200; at which point the two co-pilots switched out, and (b)(6), (b)(3) stayed in the birds as the pilots/instructors.

As the oncoming ODO I confirmed that the birds had been pre-flighted. The four co-pilots conducted the pre-flight checks prior to CO's in brief, with the primary birds being identified as 05 and 08.

The mission brief started prior to the new CO's in brief at the base theater, it lasted approximately one hour. After completion of the in CO's brief (b)(6), (b)(3) conducted an "admin clean up" of the primary mission brief that had been given by (b)(6), (b)(3) prior to breaking for the CO's in brief.

This mission was the standard TacEx that the squadron always conducts. I have seen this mission briefed approximately 15-20 times during my time at 463. (b)(6), (b)(3) briefed the mission, and the NATOPS section was briefed by the pilots to their respective sections. The brief was not rushed as a result having to stop and attend the CO's in the middle of it. There was approximately one hour to spare upon returning to the ready room and completing the brief and the scheduled take off time.

(b)(6) (b) (3) 10 USC § 13 and (b)(6) (b) (3) 10 USC § 130b pre-flighted the backups. (b)(6), (b)(3) began turning up his bird at 1900. During turn-up he had an issue with the damper on his bird, so he rolled to one of the backups. He cold started the backup, as turning back ups were not part of the mission that night. (b)(6), (b)(3) initially had issues with his start

ENCLOSURE (109)

up as well, but was able to work them out and he did not need to roll to a backup. Spinning backups were not used that night because the FCF crews needed crew rest.

(b)(6), (b)(3) took off at 1945 as scheduled, and (b)(6), (b)(3) took off approximately 15 minutes later as a result of rolling to one of the backups. The straggle plan for this type of issue was to conduct a join up at LZ black, and confirmation of that plan was relayed once (b)(6), (b)(3) took off.

Once the first mission was complete the co-pilots, (b)(6) (b) (3) 10 USC § 1304 and (b)(6) (b) (3) 10 USC § 130b, stowed their gear and headed to the ready room to wait for the second iteration of the mission to be completed. Neither of them experienced any issues with the birds during their flights.

(b)(6), (b)(3) was the Tactical lead for (b)(6), (b)(3) during their flight. During the Tac-Ex a high bird was not used when doing turf bounces. From approximately 2200-2245 the birds were running through the scenario.

ATC relayed the message of a collision off of the north shore, and that there had been a fireball as a result of the collision. We waited for approximately 15 minutes and when we did not hear from our birds we tried to use the PRC-119's to establish contact with them, but we did not have a dedicated sat net. We also attempted to contact our guys via text message, and received no reply. Lighting radio contacted us as well, and they relayed that they never got an outbound call from 3/1 and 3/2 when they were done with LZ black. All of these factors combined led us to believe that it was our birds involved in the reported collision. At approximately 2310 I called the XO, the XO called the CO, and then I called the ASO's. The CO and the XO showed up at, or just before, midnight.

After we knew that it was our aircraft involved in the mishap (b)(6) (b) (3) 10 USC § 1304, (b)(6), (b)(3) started walking everyone through the mishap binder. All the officers were called in to help establish the mishap log book and to conduct the associated requirements. Initially we were keeping track of items on white boards, but all of that information was subsequently transferred to log books, and (b)(6) (b) (3) 10 USC § 1304 took pictures of the white boards for back up before anything was erased.

I had never previously been involved in a mishap, but I have participated in mishap drills. It was helpful to have familiarity with the checklist process when dealing with a real mishap, and everything we needed to start and carry out the mishap checklist was easily located. In accordance with the checklist we confiscated everyone's phones, both on scene and in the barracks. We only received a few



phone calls on the ODO landline, and one of them was (b)(6), (b)(3) brother in law. The families were notified the next morning once CACO's and supporting personnel were located and organized.

The usual start time for the day is 0700 when pilots come in for the FOD walk. The Maintenance side of the house usually shows up at approximately 0615. Overall morale was decent, but Marines seemed to be getting worn down from working "12-on/12-off" on a regular basis. In addition it wasn't uncommon for the Marines to work during the weekends, but that had not been the case for the weekends immediately preceding the mishap. The routine of working 12-on/12-off began back in September of 2105 after the inspection failure. The feeling around the squadron was that the requirement to work weekends and 12-on/12-off was coming from higher, not the Squadron CO.

While I did not notice any fatigue from the pilots or crews on the night in question there was a feeling being in a rut in the unit. The frustration is due to the lack of flight hours that everyone, especially co-pilots were getting. It was known that if less than 50% of the aircraft were not up, than the squadron should not be executing the flight schedule. However, we routinely executed the flight schedule when we were under 50%, as well as supporting FRAGO's in support of operations external to the unit.

The squadron was shocked when the CO got relieved, especially since we had just turned a corner and had five aircraft up and running. However, no one thought it was weird that we continued to execute a flight schedule after the relief; we had confidence in our XO. The flight schedule the week of the mishap had been pared down to what we believed were necessary flights for guys to maintain, or achieve, qualifications in certain areas. For example (b)(6), (b)(3) was slated for the next WTI class and needed to knock out his NSI certification in time to attend the WTI class. This was one of the main reasons the mission on the night in question was kept on the flight schedule. Pilots across the squadron were having trouble getting flight hours due to downed birds. As a result when we were able to fly we'd try to maximize the value of the time spent in the air in regards to the getting and maintaining qualifications.

None of the co-pilots are happy with the amount of flight time we are getting. The unit has prioritized getting more experienced pilots higher qualifications over bringing up the basic proficiency of the approximately 18 co-pilots in the squadron. The previous CO did want to increase the simulator usage by the squadron. He wanted to conduct realistic training by pairing senior and junior pilots together to

practice flying difficult scenarios, but I am not aware of the number of hours logged in the simulator.

I consider all the pilots and crew that were involved in the mishap to be competent in their MOS's. They all conducted themselves professionally on a daily basis, and were all at average to above average performers. None of the pilots on the night in question had a reputation for showboating; conversely I knew them all to be conservative fliers. I am not aware of any human factors that should have kept any of the Marines off the aircraft in that night.



## SUMMARY OF INTERVIEW WITH

(b)(6) (b) (3) 10 USC § 130b

Conducted on 12 February 2016

I work at HMH-463 and I currently work in the S-3 as a schedule writer, and I checked into the Squadron in October of 2014.

On the night of the mishap I was one of the Co-pilots during the first iteration of the TacEx. Leading up to the mishap I was on leave from 4-14 January 2016. While on leave I received notification that I was slated to fly on the night in question, as a result I came in the day before at noon and 5-6 hours preparing. Prior to that flight the last time I had flown was on 18-19 December 2015, it was a cross-country mission. On the day of the mishap I showed up right at the limit of the crew day (10 hours), which was 1345. The ODO brief began at 1445, and then (b)(6), (b)(3) briefed his (the second) iteration of the mission immediately following the ODO brief. We did not brief the first iteration of the mission our briefing skills were evaluated and approved a month prior during a mission on Kauai. (b)(6), (b)(3) brief was the only one given on the TacEx because the plan was to run the same mission two times in a row, just with different co-pilots. The NATOPS brief was given by (b)(6), (b)(3) to their respective sections after the admin clean up brief. For the first iteration 3/1 was to be in the lead, but once (b)(6), (b)(3) got into the bird 3/2 became the lead for the TacEx. I don't feel like the mission briefs were rushed as a result of the new CO's brief being scheduled in the middle of the mission brief.

The tactical scenario for that night had two helicopters from our squadron departing base with a notional section of skids. The tactical scenario was to be conducted twice with the first mission being conducted during high light and the second iteration of the tactical scenario being conducted during low light. The first iteration of the tactical scenario was scheduled to depart at approximately 1945 and it returned to base upon completion at approximately 2200. Upon return to base (b)(6) (b) (3) 10 USC § 130b and I switched out with (b)(6), (b)(3) leaving (b)(6), (b)(3) and (b)(6), (b)(3) in the birds as the pilots/instructors. While it was a weird week due to the relief of our CO, I didn't feel that it was weird that we were flying on the night in question.

There was a morale problem in the unit, especially among the co-pilots due to the lack of flight hours. The flight schedules were cancelled so often that it became a running joke. However they were told to keep publishing the schedules so that they could serve as a goal for the unit to achieve. We would write weekly schedules that required

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three birds, when we knew we only had one that was able to fly. We would regularly fly when our RBA was under 50%. It is my understanding that after the CO was relieved the weekly schedule was trimmed down, and only the flights that were need to achieve or maintain quals were left on the schedule.

We departed the base as a single aircraft, since the other crew had to roll to a backup bird, and we took off as scheduled. Once the other aircraft took off and caught up to us we executed a low to high, left to left join up at 300ft with 200ft of de-confliction. The join up was uneventful. It was a standard flight that night, and the join up plan was briefed over the radio once both birds were airborne, it was also briefed at some level before take-off, but I do not remember the specifics about when it was briefed. We maintained an altitude of 500ft outbound until we hit TB, and then we climbed to 1,500ft. OPC's were not done that night, as the new regulations state that OPC's are not required for turf and externals.

We flew the route as briefed, and then made a turn towards TFTA and headed towards LZ Black. We were conducting 2920 highlight checks.

(b)(6), (b)(3) was in the lead as we rounded TB and climbed to 1,500ft. The landing gear was down, but not pinned, we generally don't raise the landing gear. The Brick would not load for the flight, so we had no GPS and we were operating off of night VFR. We conducted a landing at LZ pokapuu where we did a simulated extract using our ASE gear, we were not primarily on FLIR. It was briefed that we would use simulated weapons during the simulated extracts. I don't remember exactly how many members of the crew were in the brief, but at least one from each bird attended the brief. I don't remember whether we had the ramp down or up, but I know we did not move it during the flight, and the crew did not move much during the flight.

During our flight we conducted a few turf runs both were counter clockwise (north to south). We did not use a high bird during these runs. The horizon was a little bit obscured, and there were some higher clouds (at approximately 2,500-3000ft). (b)(6), (b)(3) specifically pointed them out to me. I believe we had approximately 10 miles of visibility. (b)(6), (b)(3) was a good WTI, he would work with newer pilots to help them gain confidence in the aircraft, and to expand "their box." (b)(6), (b)(3) also noticed, and pointed out to me, that due to the weather conditions the goggles were hazy. That flight put me over 330 hours flying and 10-15 hours on the goggles.

We conducted two iterations of the black route that night, as well as two or three turf runs. There was one lead change that night that occurred during a turn, and it was a non-standard lead change. During

the lead change we had approximately six to eight rotors of distance between the two birds. While the lead change was non-standard both aircraft knew what was occurring, and everyone was tracking on how the lead change was to be conducted. During the return to base we went up and over the ridge line because the weather was clear enough to do so.

There was no other significant aerial traffic that night, and there were no incidents or unusual occurrences to speak of during our return flight. My bird landed first on the 101 pad, I don't remember how the other bird landed that night.

During our flight we did not violate NATOPS, and there was no "hot-dogging." After we landed I was getting ready to exit the aircraft and I felt a tap on my shoulder, it was (b)(6), (b)(3) ATT I exited the aircraft and he took my place. I then dropped off my gear and proceeded to the ready room where we conducted an informal de-brief. Approximately one hour later the calls about a possible collision started to come in. At that point we tried to establish comms over the radio, but were not able to raise our birds. Additionally we tried to retrieve the PRC-152, but we could not access it as we couldn't get into the room due to the cypher lock. Once we realized it was our birds in that crash the ODO called the XO and the OpsO, but couldn't initially reach the OpsO.

There were no mechanical issues with the aircraft that I flew on the night in question. When I exited the aircraft there was nothing mechanically wrong with it. When I was flying on the night in question the winds were not an issue.

All of the pilots involved in the mishap were average to above average pilots and the crews on board were all "varsity" level crews. There were no human factors that I am aware of that should have prevented any of the Marines from flying/being aboard those aircraft that night. Had any of the Marines on either of the birds that night known that something was wrong with the aircraft, or was aware of any of the pilots or crew conducting themselves improperly I am confident they would not have hesitated to stop it and correct it.

the 12th century, a new style of architecture was introduced from the East. This style was characterized by the use of arches and domes, and it was known as the "Saracenic" style. The Saracenic style was a blend of Islamic and Byzantine architecture, and it was used to build many of the great mosques and palaces of the time.

The Saracenic style was a very important part of the architecture of the Middle East, and it was used to build many of the great mosques and palaces of the time. It was a style that was very different from the architecture of the West, and it was a style that was very much influenced by the Islamic faith.

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(b)(6) (b) (3) 10 USC § 130b

**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Sunday, March 27, 2016 20:07  
**To:** (b)(6) (b) (3) 10 USC § 130b  
**Cc:** (b)(6) (b) (3) 10 USC § 130b  
**Subject:** RE: Crew Positions for PS 31/ 31 14 January

Gentlemen,

Pegasus 32 Aircraft 05.

**Left Seat:** (b)(6), (b)(3)  
**Right Seat:** (b)(6), (b)(3)

For the Crew in the back. I know who was in front, and who was on the tail. I am unsure of which window the crew chiefs had. My indications below are a best guess based off what I remember prior to taxing out.

**Front Cabin:**  
(b)(6), (b)(3) (left gun)  
(b)(6), (b)(3) right gun)

**Tail:**  
(b)(6), (b)(3)

Very Respectfully,

(b)(6) (b) (3) 10 USC §

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**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Friday, March 25, 2016 9:35 AM  
**To:** (b)(6) (b) (3) 10 USC § 130b  
**Cc:** (b)(6) (b) (3) 10 USC § 130b  
**Subject:** Crew Positions for PS 31/ 31 14 January

Good Morning Gentlemen,  
I'm cleaning up a few things on the investigation. Would both of you be able to email me back, to the best of your knowledge, the crew positions of your respective aircraft on January 14th 2016?  
Left/right pilot seats, left/right gun and tail would be perfect for all 6 pax.  
Please say in the email the side number of the aircraft as well.  
Thanks for the constant help and please let me know if you need anything.  
Hope you guys have a great weekend and a good Friday.

Very Respectfully,  
(b) (3) 10 US

ENCLOSURE (110)

1. The first part of the document is a list of the names of the people who were present at the meeting. The names are listed in alphabetical order.

2. The second part of the document is a list of the topics that were discussed at the meeting. The topics are listed in alphabetical order.

3. The third part of the document is a list of the actions that were taken at the meeting. The actions are listed in alphabetical order.

4. The fourth part of the document is a list of the decisions that were made at the meeting. The decisions are listed in alphabetical order.

5. The fifth part of the document is a list of the recommendations that were made at the meeting. The recommendations are listed in alphabetical order.

6. The sixth part of the document is a list of the conclusions that were reached at the meeting. The conclusions are listed in alphabetical order.

7. The seventh part of the document is a list of the next steps that need to be taken. The next steps are listed in alphabetical order.

8. The eighth part of the document is a list of the people who were responsible for the actions that were taken at the meeting. The people are listed in alphabetical order.

9. The ninth part of the document is a list of the people who were responsible for the decisions that were made at the meeting. The people are listed in alphabetical order.

10. The tenth part of the document is a list of the people who were responsible for the recommendations that were made at the meeting. The people are listed in alphabetical order.

(b) (6) (3) 10 USC § Re-interview

No issues with a/c 05 with collective bias.

Nor does he remember (b)(6), (b)(3) doing the same.

Good GPS. No brick. Hand jammed GPS.

First time for him bumping over the ridge.

He went to the TFTA and bounced came over the ridge. He was at 500 -1 was at 300. Jointed low to high after a left to left pass.

Never got into putting Barstow into the GPS.

Spot report crossing feet dry after CP Barstow. (turtle bay)

Points he had loaded in: Carlsbad, IP Chevy, did not load LZ.

First go was about a mile off shore on the track.

Recognized (b)(6), (b)(3) voice on the radio.

Kill switch. He doesn't use. Doesn't think it has totally proliferated in the community.

Why so close to the coast. We didn't fly that. not sure why the second go used that.

419 vs 416. If you don't adjust the collective bias properly.

Discussion over going heads down.

Had a 419 conversation with (b) (6) (3) 10 USC § discussing how heads down time is taking the second pilot out of the fight.

Some ergonomics lend itself to inefficiencies.

(b)(6), (b)(3) made most of the MESL calls on the first go.

16.5 comes from DCA to make HAC at 16 months. The first time he heard it was when (b) (6) (3) 10 USC § came on board.

FIRST TIME GOING OVER WHITE HOUSE.

FIRST TIME FLYING THIS ROUTE

There is talk of people lat moving to another airframe.

Morale. Working hard. 12 on 12 off.

Were there friction points between ops and maint. We knew we were there to show our faces so maint wouldn't see us not at work.

You're going to make them work for 12 hours but you're only getting 8 hours of work.

Several anymouses over the 12 on 12 off.

ENCLOSURE (110)



The opso pushed the 3000 hours. I remember sideways glances over this.

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

was trying to get a debrief out of

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

during the chow period.

## Summary of Interview

(b)(6) (b) (3) 10 USC § 130f

GPS Bent. Com page up. 06 at 500 and 05 at 300. 05 was returning. 06 was departing buoy. (This was the first go) Hugging the shoreline. One or two turns in holding. 1.5 turns in holding. Heading north, continued right turn into IP.

Roach was giving all the simulated communications over the radio. Spot report by (b)(6) (b) (3) 10 USC § 130f after rounding the horn. Holding over water instrument scan. Can't remember if (b)(6), (b)(3) was using kill switch. He said he wasn't wearing one.

a/c 06 had 419s for all engines.

Never really had any problems with splits. Fence checks. Fenced in didn't fence out.

Q: Has there been a higher discussion of heads down time?

A: This Fiscal Year flown 7 hours in the past four months. Before the mishap he had flown only a few hours. Talked to guys 20 to 30 hours less than him. They were LLL qualed. Knew about (b)(6) (b) (3) 10 USC § 130f showing lower readiness. Took one on the chin. You can't get off the line without trouble shooting. 2 December HAAR. Lost MGB oil pressure. Diverted to Linai. 3000 hours. He thought was the parts. (b)(6) (b) (3) 10 USC § 130b could send a demand for signal for parts. We have to be at 50% when the AMSRR comes out at 1000 each day.

Q: Who routed the mishap flight sked?

A: Don't know. 13 Jan (b)(6) (b) (3) 10 USC § 130b went through the night lab. AFCS failure. Bite codes. 022, 522, He was in event 32. Fixated on a/c breaking.

(b)(6), (b)(3) said at the aom, "I guess we have a lot to talk about." to the commanding officer. I could tell something else was on (b)(6), (b)(3) mind. Just a little flustered.

His brief could have been a lot better, he was tripping on his words. Skipped parts of the brief. Had to go back. I felt like

ENCLOSURE (11)

he phoned in a lot of the brief...phone a friend. He appeared not confident at the time. He had done this brief before, but didn't bone up on it. It was stale.

Was the nature of the brief related to the mishap. In holding that's where they pepper you with questions. He had a 0800 brief Friday morning. (b)(6), (b)(3) When I came to work that day, I found out we were going to fly, I was surprised. Nothing Pegasus does is ambitious. It was a high visibility section leader code. We didn't do OPCs outbound. Non-standard join up.

(b)(6), (b)(3) was on the flight schedule all the time. (b)(6), (b)(3) mentioned that the last time he flew nights was September

The most dangerous portion of the flight was (b)(6) (b) (3) 10 USC § 1301 and (b) (b) (3) 10 USC §

Q: Who was the boss?

A: Don't know. The XO was in charge. He was saying what we were doing. My guess was he was being told what to do.



SUMMARY OF INTERVIEW WITH

(b)(6) (b) (3) 10 USC § 130b

Conducted in person 16 February 2016 at MAG-24

I arrived to HMH-463 in September 2013. I was the (b)(6) (b) (3) 10 USC § 130b (b) (3) 10 USC from December 2013 to August 2014. I was the detachment maintenance control chief for the MRF-D.

One of the factors for the failure of the 2015 CNAF inspection was the loss of experienced maintenance personnel. It seemed like lots of the leadership all left within 3-4 months of each other. There was a resulting breakdown in the "simple USMC stuff." Under our previous CO, (b)(6) (b) (3) 10 USC § 130b, there was a culture of "brilliance in the basics." (b) (3) 10 USC built comradery and teamwork.

During the 2014 RIMPAC, readiness went down. But, afterwards we were able to recover. However, it seemed like we developed a mindset of getting pilot checks and looking towards WTI. That was the focus of the planning, and as a result we were just filling in holes.

With the last few sets of crew chiefs, there was an inability to plan for more than 60-90 days out. It seemed like we were "planning for yesterday today." One example was a pilot mentioned to me during MRF-D that he flew more in a week than in the previous 6 months at the squadron.

When I went on MRF-D, (b)(6) (b) (3) 10 USC § 130b was the (3) 10 USC. It didn't seem like the squadron staff (CO/SgtMaj/AMO) were tracking what was going on down at the MRF-D. I was NJP'ed on MRF-D.

The planning at the squadron seemed to be knee jerk reaction based. The flight schedule was normally not signed until about 1800 each night. The schedules were constantly filled with red ink.

Spring WTI - (6) (b) (3) 10 USC § failed, attitude problem. Fall WTI was prepped by a Sgt in Australia, no forethought. I never saw a TEEP during my time in the squadron.

OPS / MAINT relationship took longer to develop upon return from the 1<sup>st</sup> MRF-D than the return on the 2<sup>nd</sup> MRF-D.

OPS was writing the flight schedules. Everyone had to be at the briefings. The briefs that were used were often cookie-cutters.

It seemed to me that the maintenance chiefs didn't understand the operational level matters, and as a result were ineffective. But, there was never any accountability for not performing. For example, there were two engine misahps and a gearbox mishap that revolved

ENCLOSURE (112)

around a Sergeant in the QA shop. There was a lack of supervision at the SNCO level in the QA shop. One was the class-C mishap that was investigated by (b)(6) (b) (3) 10 USC § 1304. It seemed there was a mindset of qualifications being more important than accountability.

There was a time before Thanksgiving when it seemed flight line and QC were in a fight. The squadron liberty was cut short and we went to 12 hours on / 12 hours off. In November and December last year the flight line starting downing aircraft for minor issues. I recall a time when they downed a plane right before an operation that was said "had to go."

It seemed like we always saw the same crews on the flight schedule. Even when they changed out the pilots which was the focus to get qualifications, the crews were the same. There was a sense that certain crew members didn't want to fly with certain pilots because of attitudes. This causes a mindset of punching clocks and can cause bad situations.

I was surprised the squadron kept flying after the CO was relieved. It seemed like the hard work we put in was thrown away. It seemed like things with (b)(6) (b) (3) 10 USC § 130b were getting better. I think the unit was better than what the reports were showing. I felt like we pushed for X's, but suffered aircraft readiness because of the flight hours. It seemed like the attitude was to bang the rust off by planning for the highest level code you could fly.

Regarding the night of the incident, I was worried about the NDI check that was supposed to go. I thought why would you have 8 crew chiefs on the schedule? I asked myself "how did this flight schedule get signed off on?" When I look at that schedule, I don't think safety was as much a priority as it should have been.

They were flying the crew chiefs into the dirt.

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

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

was afraid of flying at night.

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SUMMARY OF INTERVIEW WITH

(b)(6) (b) (3) 10 USC § 130b

17 February 2016

I work at (b)(6) (b) (3) 10 USC § 130b, before that I was the DOS from June 2014 until July 2015. I checked into the unit in June of 2014.

The Friday before the mishap I led a cross-country flight to Kona. The objective was to get (b)(6), (b)(3) his NSI pre-certification. We were short on low light windows to get this accomplished; we had three hours of low light on Friday and three hours of low light on Saturday. We were also conducting division leader training, we had four aircraft, but not all four were functioning at 100%. One of the Co-Pilots had an issue with the gyro shaking really fast. To address this issue he swapped it out to the other side. Once it was switched out to the other side, and the circuit boards were pulled it smoothed out. I don't recall if that was on aircraft 05 or 06, but that is usually an indication of a pending failure by the gyro.

The flights on Friday night went well. On Saturday we had an issue with the nose gear on one of the birds, it was out 90 degrees, so it landed at BAF PTA. As a result of that we scrapped the low light mission for the night. This was the third low level flight for the co-pilots, we ran turf routes, and conducted OPC's at 1,000ft and had no issues. The OPC's are to be done in line with the heavy lift requirements, and in accordance with any guidance established by the CO. Being able to fly the black route is part of the unit's SOP.

I received a text at 0830 on Monday morning informing me that the CO had been relieved. I was concerned that the crew would start receiving texts about the relief while we were flying, so I briefed the Marines about the CO being relieved after the AOM brief. I was surprised that the CO got relieved. The common train of thought in our community is that a CO wouldn't get relieved for maintenance issues. Once I returned from the cross country mission I went to work on the weekly schedule, it was a robust schedule. The guidance I was receiving was to continue to operate as usual, and to treat this like the relief was treated at 367.

After the CO's relief the field grade officers got together and we talked about what needed to be done in preparation for the next CO, as well as holding an AOM meeting in order to close the loop on some issues, as well as how do we get the company grade officers ready for the new CO.



(b) (3) 10 USC § attended the AOM meeting, which changed the tone of the meeting. It was awkward due to the lack of time between the relief and (b) (3) 10 USC § showing up on deck. He wanted to sign the schedule on Thursday for Fridays flights, but he didn't sign the schedule for the night in question. (b) (3) 10 USC § did ask why they were flying at all at that time. I did feel like we were in a position to execute the FRAG that came down from the MAG.

The CG came over on Monday o/a 1600 IOT address the squadron, he said that he relieved the CO because of readiness issues and other issues. The CG's address had a weird tone to it, I kind of remember a statement by the CG that we need to "break glass, but not backs" IOT get the squadron back to where it needed to be.

Our flight hours as a unit took a hit during the TFR period that was created as a result of the Presidents vacation in Kailua. We considered other options to get out of the TFR during that time period, like moving the birds to Kona or Honolulu, but ultimately we left the birds at MCBH. We decided to use that time period to rest, refit, and get our RBA above 50%. We also decided to try to establish a battle rhythm of conducting cross-country flights at least once a month. Those missions boosted the morale of the Marines. We usually took one division on cross-country missions.

There was an inspection during the end of August/beginning of September, and we flew during the first week of that inspection, but after that we didn't fly again until the air show in October. This was the same time frame that the MRF-D returned from Australia. The unit had 2368 flight hours for the year, which includes the approximately 550 flight hours from the MRF-D rotation. However, a lot of waivers were given for missing qualifications as a result of low flight hours. We felt the TFR prevented us from showing where we were at as a unit for that time period. We continued to write the schedule as we previously had, even knowing that we most likely couldn't support it with the aircraft we had up and running. The morning was the go/no go time, which ended up starting the day with an anti-climactic feeling for the squadron.

The unit adopted a best practice that had been put into practice by other units across the Marine Corps. It was a contract between the operations and maintenance sections; which gave the units something to look to and comply with when issues would arise. We are supposed to have 4 RBA aircraft IOT carry out flight operations, but whether or not we comply with that is the CO's call. The unit never had four RBA aircraft during the time period between the inspection and the mishap. Everyone in the unit was frustrated, but thought that maintenance

would catch up. (b)(6) (b) (3) 10 USC § 130b was the (3) 10 U for the failed inspection, he remained the (3) 10 U through the second inspection in November of 2015 that we passed. Following the successful inspection he was moved to the S-4, and then to the MRF-D OIC billet.

I was surprised that MRF-D was cancelled, but I knew that getting them out the door would have been tough; some of the aircraft had not flown in a year and a half to two years.

(b)(6), (b)(3) had been identified as the next guy to get his NSI qualification, which was also in preparation to be the next pilot sent to the WTI School. His NSI certification was scheduled for December, but that was cancelled in order to give him more time to prepare, as we did not want to rush him. We also pushed the MOTS assist to February, as the last pre-certification test was only a week before the certification. (b)(6), (b)(3) was the next in line for his NSI certification after (b)(6), (b)(3)

We found out who the new CO was going to be on Tuesday, and we thought we would have a week to square things away before he reported in and took command. The Squadron XO was to proceed as the acting CO until the new one took command. There was no discussion IRT totally shutting down operations until the new CO got on deck. However, we did pare the schedule down to what we thought was necessary to achieve the required qualifications for (b)(6), (b)(3) and the flight on the night in question was one of those. The decision to continue to fly was passed down to us via the MAG-24 XO. The day after the CO was relieved we received a FRAG from MAG-24 to support an Army fast rope demonstration.

At the time of the relief the feeling in the squadron was that the unit had turned a corner, which is why we were all surprised about the CO's relief. The staff did feel responsible, we felt like we had let our boss down, and we were concerned about losing our jobs too.

We had basically been on 12-on/12-off since thanksgiving, when our 96 was shortened to a 48 per the direction of the Squadron CO. We worked weekends a lot, but it was not every weekend. The operations shops mirrored what the hours the maintenance shops were working.

The SNCO leadership on the line was lacking, in general they weren't their teaching the junior marines as they should have been. There was some bickering within the squadron. I had heard anecdotally about plane captains looking for reasons to down aircraft, and downing them unnecessarily because they created a contest out of it. (b)(6), (b)(3)

(b)(6), (b)(3) solution to this issue was to standardize all plane inspections.

I was not in the ready room for the pre-flight brief, but it is SOP for at least one crew chief per aircraft to sit in on the brief. I did think it was weird to break from the brief in order to attend the new CO's in brief. But to compensate we allotted the briefers extra time to finish after the new CO's brief.

The use of "//S//" on the schedule was normal, and it was understood that if any major changes were made to the schedule that it would be re-circulated to the sections that the changes could potentially impact.

During the times that we were not able to fly we would push out pilots and co-pilots to use the simulator, but the simulated goggle time was low. We pushed the use of the simulator during the ALMAT stand down and the TFR. We don't have the options that other squadrons do on the mainland to use sister squadrons in order to maintain flight hours and qualifications. We also have limited training options due to limited training areas, which leads us to end up running the same missions a lot. Regularly running the Black Route was part of our SOP.

These are all factors that lead to the co-pilots having limited number of hours on the stick, and when we schedule cross country flights we focus on the Co-pilots scheduled for the MRF-D det.

Our Campaign plan was published on a calendar and pushed out in that form. The TEEP for this FY was focused on the minimums, but we still had trouble meeting those minimums, which resulted in waivers being issued within the Squadron, but we were maxing out instrument time in the simulators.

The priorities for the squadron were: 1) MRF-D and 2) WTI qualifications, because we were getting ready to lose three WTI's. The WTI's were also a priority because there were rumors that we were going to be tasked to support the 31<sup>st</sup> MEU as well, and if that happened we would have been stretched thin on WTI's.

The ORM for the flights on the night in question was only socialized with the squadron, there were minimal visits from the MAG leadership, there was some guidance from them, but largely 463 was left on our own to get back to normal ops.

(b)(6), (b)(3) had approximately one flight in the last 30 days, it was for four hours, and it was a FRAG. (b)(6), (b)(3) had not been on the goggles for approximately 90 days, and he didn't have an opportunity for a warm up flight prior to conducting the TacEx as the section lead.



I was scheduled to fly on the night in question as well, but when the schedule got pared down, I gave my flight hours to (b)(6), (b)(3) in order to up his flight hours. I was aware of discussions about (b)(6), (b)(3) lack of flight and goggle time. Safety raised the issue and there was approximately a 30 minute discussion on the topic before the XO made the decision to fly as scheduled.

(b)(6), (b)(3) was able to get three codes that night while hot-seating. We weren't chasing "X's" as a squadron when the equipment would cooperate. Our pilots and crew are current, but they aren't proficient, there just aren't enough opportunities to fly. Some co-pilots are scared to fly at night due to the lack of experience flying at night.

Not going to MRF-D is a blessing in disguise; it is giving us time to get back to the basics right now. We did institute a get well plan for the squadron that dedicated Monday's and Fridays as Maintenance days, and Tuesday, Wednesday, Thursday as training days. But the birds would not be up and running until approximately 1300, so we'd still be short on daylight hours to fly. In addition we get hit with a lot of FRAGS that don't have any real value to our pilots.

We only did turning back-ups for big events, but they were not done for routine missions. The birds are pre-flighted during the day.

The squadron as a whole is tactically weak; I was surprised by the lack of tactical knowledge, even by the WTI's. Some of them are only comfortable flying routes that they had flown before.

When outbound we maintain an altitude of 500ft, and then climb to 1,000ft when we hit the buoy. Our SOP is to conduct join ups on the deck, and I would consider a left to left pass and turn around at 300ft a non-standard join up.

I sit on the human factors board, and there were no significant human factors for anyone on those two aircraft, except for (b)(6), (b)(3)

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

(b)(6), (b)(3) was texting with his wife one minute prior to the crash; he was slated to be the left window observer. There were attitude problems in the squadron, we had issues with height and weight, the shop looked bad, the SNCO's weren't mentoring their junior marines enough, there was a general bad attitude about being in Hawaii and in the Squadron, and there were continuous leadership issues with the same Marines.

I felt like the squadron started to decline during my first month as the OpsO, and we took a downward turn after the CNAF. Failing the wing inspection came out of nowhere; there were no glaring issues or red flags. The CO was visibly upset because he put a lot of trust in his staff, he didn't micro-manage them. We never recovered from that and that is when we largely began working 12-on/12-off.

**Subject:** Fw: notes from interviews

**From:**

(b)(6) (b) (3) 10 USC § 130b

**To:**

**Date:** Tuesday, February 16, 2016 8:22 PM

----- Forwarded Message -----

**From:**

**To:**

(b)(6) (b) (3) 10 USC § 130b

**Sent:** Tuesday, February 16, 2016 2:39 PM

**Subject:** notes from interviews

16 Jan

(b)(6) (b) (3) 10 USC § 130b

Explained the difference between JAG and AMB  
Are you available over the next few months? Yes  
Checked in Feb 7, 2015  
Currently a schedule writer in the squadron

Mishap day: I came to work about thirty minutes prior to crew day. Ate lunch in the car.  
1445 briefing. Began planning for (b)(6), (b)(3) flight.

I got on the jumps computer and worked on the cover page, timeline, execution checklist.  
Were you getting initial codes? Yes 2920

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

was preceert complete

Were you a priority for the HLL syllabus? yes

Overall priority for the flight was

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

Was this a warm up for (b)(6), (b)(3) It was more dangerous for me.

Planning- HLL crews on the first go were to fly the same SOM that (b)(6), (b)(3) briefed.

Myself and (b)(6) (b) (3) 10 USC § 1 had briefed this mission twice before, so we were not briefing this event.

We were previously cancelled for a/c availability  
It was something that had been briefed before.

When did you brief this flight before. I believe it was December.  
We write a schedule for the launch. We brief it regardless for practice.

Fly the same/brief the same event  
I believe this was driven by the PTO to get us in the books.

You plan aggressively. So we were waiting for a/c to come up

ENCLOSURE (11)



Is it safe to say that when you write a daily there's so way we will be executing this?

A lot of dailies don't match weekly

Who is the PTO. (b)(6) (b) (3) 10 USC § 134 the WTI

You have two different ODO's.

Talk about the brief. Anything of interest?

Standard ODO brief

Flight brief was weak

You could tell (b)(6), (b)(3) wasn't ready to brief the flight.

It felt like a copilot brief. Something a junior guy would give.

He was preoccupied with CO's relief and maintenance problems.

Would you conclude 12 on 12 off he was tired or fatigued?

-from outside looking in

Was it normal to have XO signing the flight schedule?

The whole week felt odd

We thought being relieved was out of his control

We really looked up to the CO He's a smart guy.

He was talking about bringing DRRS numbers down

You can say he was reporting lower DRRS?

He was sticking his neck out for the squadron.

Do you know for a fact that he reported t4 when he could have reported t3? No

The copilots got 0 hours

I flew maybe 3 hours in the past three months.

What do you attribute that to? A/c availability

Back to (b)(6), (b)(3) Was he focused on a/c availability and not on this flight? He was preoccupied

What about the relief. Where did the direction come from? I thought the CG's words impacted the AMO. The CG had a school circle and stated "I told the new CO not to break backs but to break glass."

When did this happen? School circle in the hangar. Maybe Tuesday or Wednesday

I believe (b)(6), (b)(3) felt he was going to get fired.

Did you fly on the ccx to Kauai? Yes. I briefed my flight then

How many hours have you flown in the past year? I have 290 right now. I showed up with 240.

The hours dropped off when we failed the maintenance inspection?

Is it safe to say that the squadron never recovered from the maint inspection?  
I wasn't a priority for quals.

The NSI check in Dec was cancelled because of a/c readiness.

We flew just not junior copilots

How long did the brief last? About an hour  
(b)(6), (b)(3) briefed the tactical portion

Who briefed your section? (b)(6), (b)(3) did admin clean up. Tailored to first goes

When (b)(6), (b)(3) briefed, did he cover notional threats? HA Wendy/CP Carlsbad? Notional squad with Manpads in the vicinity of LZ Red

Did he brief evasive maneuvers?  
I don't recall

Did he hit all briefing items? Used a sheet that was less cumbersome than the pocket tacman.

Anything from the brief that stood out in your mind? (b)(6), (b)(3) walked the dog through the entire flight for me to the extent of covering radio switches etc

LLL Join ups/hot lz? no

The internal brief got cut short because of the 1700 co inbrief  
We returned after about an hour and finished walking through the cockpit brief

Did you feel that the 1700 meeting was a disruption? No

You have a CO relieved, XO signing, robust flight schedule, and in the middle stop to attend a new CO briefing. Was this a good idea?

Were you 12 on 12 off during this time? we are always working long in ops

What are the rest of the pilots doing? I don't know

When did 12 on 12 off begin?  
12 on 12 off started during the Thanksgiving 96  
12 on 12 off never put in comments on the flight schedule.

When you write a flight schedule, do you hand walk? Yes

Why a digital S. So you don't have to walk it back through?  
We take it back or back brief them.



Theoretically, you could miss backbriefing someone? I guess.

So you go to the theater, what time did you return to the squadron? About an hour later

The CO said he would hang back for two weeks and observe.

He didn't sign the flight schedule, he wasn't in command yet.

Night of mishap: Thursday afternoon signed papers and he was CO

Do you remember the CO's brief? No

I was reviewing the flight in my head. So you were preoccupied with the flight? Yes

Who did you ride with? I drove myself

When I returned (b)(6), (b)(3) went over LLL join ups/fence checks/hot lz procedures.

Start up (a/c 08)

15 minute penalty turn. Damper failure. vibes shut down then restarted. same issue

Did the hac have a test card? no. it was just a penalty turn.

Did you go out early to ground turn. No. started per the brief time.

After the second start, called (b)(6) (b) (3) 10 USC § 130b in -2. Told them to press to the TFTA. We rolled to the back up a/c 06. Told -2 we would join around Kahuku point after we launched. -2 went to the TFTA for single ship work.

Which seat were you in? Right

Did you decide that. Did you want to sit in the right seat? No. But the second go, (b)(6), (b)(3) (b)(6), (b)(3) needed right seat time and we didn't want to do the hot seat dance.

After we launched we joined with -2 around Laie.

Did you fly with the gear down? Yes. Why? Some pilots never raised the gear. And we had a gear emergency a few weeks before the mishap.

Did you pull the pins? yes.

Did you arm the ASE gear? Yes, but we had no DRCM.

That was a big thing for (b)(6), (b)(3) We talked about the ASE gear during our sim earlier in the week.

You had a sim with (b)(6), (b)(3) on Wednesday? Yes. Flew this flight. and reviewed ASE gear.

Did you load the brick? No. the GPS was bent.

So your primary nav was down? yes

Was the GPS gripe in the book? I don't recall

I do know the GPS in 06 had not been working.

During the flight you ended up in the TERF regime? Yes

Did you do OPC's? No

When we departed, I asked enroute. (b)(6), (b)(3) said we would stay out of the terf environment, so we wouldn't be doing OPC's.

But you ultimately flew TERF? yes

You were coded for TERF? Yes

So you're departing buoy, 500 foot outbound. Spotlight on? no.

When you passed -2 for the join, what altitude were you? 500 feet.

And -2? 500 feet

Co altitude? Yes

When you passed left to left, were you on the controls? I passed the controls to (b)(6), (b)(3) for the pass.

Did you see -2. Yes I had him in sight all the way from Kahuku.

What speed were you at? 100kts

During the flight brief, were OPCs briefed? Yes. (b)(6), (b)(3) briefed this.

He briefed it, but 32 never did it? yes

This initial join up was never briefed? (b)(6), (b)(3) briefed it.

After the initial join up on departure, was there a lead change? No

Did you secure the peanut light since you were -1? No

Was there a "tactical flare" to this flight? Yes. (b)(6), (b)(3) was playing the DASC

There was a manpad threat between IP and LZ Red.

What zone did you land in? Puukapu

What was your formation at landing? Echelon right

You had four crew in the back. Do you know where their positions were?

Yes. (b)(6), (b)(3) right window. (b)(6), (b)(3) left window. (b)(6), (b)(3) ramp. I don't know where (b)(6), (b)(3) was.

Was the crew on gunners belts? I don't know.



Before walking to the a/c was a flight brief conducted with the crew? We had one rep from the crew in the brief. I don't remember who. (b)(6), (b)(3) briefed the crew.

Did he brief off a map? No

Was there a NATOPS brief with the crew to cover emergencies? I didn't see him do one.

Now, you land a Puukapu. Did you do the standard two left, two right lead change? No. We only did one lap in the pattern because I didn't need section CALS.

We did one lap, then came right to head to Black for the black route. Ran black route south to north.

So, you ran the route, what were your radalt settings? 150 right, 100 left.

At any time enroute were you below 100 feet? Yes

After running the route south to north, we did a lead change and I passed the controls to (b)(6), (b)(3)

Over black we verbalized the lead change. Crew Chief reminded us to turn on the upper smack.

Were there any issues with the flight crew? none

You had no doubts they were performing to the best of their ability? yes

Was the Terf Route uneventful? Yes

After -2 ran the route, we RTBd.

How did you return to homefield? Via the white house.

So the weather was good? Yes. A little hazy though. It was clear but there was moisture in the air.

HLL ended at 2206, what time did you return? We were on deck at hotseat time.

When (b)(6), (b)(3) hotseated in, were there any issues? no

Besides the GPS? Yes

No problems. I believe we had 8k of fuel.

So you didn't need to go through the pits? No

What did you take off with? I can't remember. (ADB had 14.5K)

Where does (b)(6), (b)(3) work? Ops. He's kind of an AOPSO. After deployment, he was supposed to concentrate on NSI.

When were you going to do NSI checks? We cancelled the fleet support request because of a/c availability.

Do you know what time (b)(6), (b)(3) came to work? No

I came in about a half hour before (b)(6), (b)(3)

Any fatigue, alcohol, human factors noted in the crew? No

In the sim the day prior. Did you fly night or day? NVG's? Day

Food. When did you eat before the flight? I ate in the care before coming in for the brief.

What about flying with (b)(6), (b)(3) He mentioned his last NVG flight was September. He was good to go.

How do you rate (b)(6), (b)(3) Professional. Above average.

(b)(6), (b)(3) Conservative. I didn't fly with (b)(6), (b)(3) enough to.

Did you ever fly with (b)(6), (b)(3) No

Were you wearing a HUD? No

Was the ramp up or level? Level

When flying in the -2 position, did you notice the other a/c ramp was up or level. I guess level.

When you landed at Puukapu, were you thinking of the ramp? No

After landing. What was the flight like? It was fine.

Did you feel "rusty"? YES

We put copilots on test lines to give them more time.

After reinspection did you get more flight time? No

What's it like to be a copilot in a 53 squadron? These days it's the same. Nobody flies I had a friend on the west coast. Two months ago, he was LLL qualed. He had 15 hours less than me.

On the night of the mishap. (b)(3) 10 USC was getting 3x's you were getting two? Yes  
Is it normal to load x's on the schedule? I briefed this flight twice before. The last time was Kauai Dec 18

Do you think it was a matter of convenience to do this scheme of maneuver?

Why aren't copilots briefing the mission? We briefed before and were told that we accomplished the briefing requirement. This was the third time I have been on for the 2920 on a weekly, and second time on a daily.

You have a Thursday PM ODO and that same person is scheduled for FCF, is that normal?

No

-it was a mistake

Does this happen frequently? No

What do you think happened that night? (b)(6), (b)(3) was -2. I think -2 was distracted and lead turned into holding and -2 just ran into him.

Was holding briefed by (b)(6), (b)(3) The brief was poor. I could tell that he briefed it before, but was rusty.

What was your briefed enroute speed? 120

## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

17 February 2016  
MCB Hawaii

Quite a few H2P's were not able to be HAC'd at the end of 2 years due to not making the 500 hour minimum.

The Aviation Safety Officer, (b)(6) (b) (3) 10 USC §, would definitely voice disagreement with the schedule if he felt it was unsafe.

(b)(6) (b) (3) 10 USC § felt that a low-point in the squadron was when the fuel line problem was identified in 2015.

Working the 12 hours on 12 hours off over the extended period was leading to low morale in the squadron.

In January 2016 and December 2015 the squadron was heavily prepping for NSI and WTI production.

Flights during the January 2016 and December 2015 were night focused.

Rumors came up through the officers of SNCO's that had a competition to down aircraft.

The tactics flights were differed very little do the availability of changing up LZ's and training areas. This led to "canned" tactics flights.

I flew with (b)(6), (b)(3) during the night before the mishap. (b)(6), (b)(3) flew well but was visible tired.

Cultural workshop in December 2015 was MARFORPAC directed.

OPC's were not required for TERF. The technique of not doing OPC's was being practiced even at WTI.

The mishap aircraft (05, 06) were mechanically sound the day before the flight when they were flown for the night section on 13 January 2016.

No significant human factors with any of the mishap aircrew.

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

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

had

noticeable stress and pressure on him as the AMO and regaining quals. (b)(6), (b)(3) had new baby. (b)(6), (b)(3) was a great crew chief but was dragging his feet on getting his CDI quals.

ENCLOSURE ( )  
(114)



## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b USMC  
Commanding Officer, Marine Aircraft Group

Review of purpose of AMB and findings of fact etc

Q: In your own words how did you find out about the mishap?

A: I was getting ready to hit the rack. (b)(6) (b) (3) 10 USC § sent an email regarding a Huey on the big island and I was briefing the CG on the Huey. I got a call from (b)(6) (b) (3) 10 USC § 130b about an overdue aircraft. Half hour past expected land time. Report of fireball and explosion on north shore. I told the CG that I was heading in. Looks like something with 463.

Q: Do you remember what time that was?

A: Close to 2300

Q: At this point you went to Sqdn?

A: I called (b)(3) 10 USC and told him to head in. By the time I got changed over we hit the MAG at the same time. Time to start calling in key players from staff.

Q: When you got to the MAG did you go to the squadron?

A: Not right away. I was getting phone calls and updates.

Q: Did (b)(3) 10 USC call?

A: I called him at home. I figured we would need help from Base assets. I needed base to be aware to tap into assets from there.

Q: How did that process go?

A: By the time I called (b)(3) 10 USC it was between 0030-0045. I think he got his folks energized. Folks started getting energized across the base.

Q: Who was put in charge of CACOS?

ENCLOSURE (115)

A: I worked that through (b) (3) 10 USC and (b)(6) (b) (3) 10 USC § 130. The squadron was working. We did a MAG wide sweep. I called (b)(6) (b) (3) 10 USC § 130b and he coughed up three guy. There were seven notifications on island and casualty branch on island.

Q: How did the squadron keep it from getting it out of the bag?

A: I remember (b)(6) (b) (3) 10 USC § 130b and I determined to keep the night crew on hand.

Q: How did notifications work?

A: We had to get everyone postured and briefed. It took time working with CACO branch. About 0730 we were able to launch them. (b) (6) came to the squadron and were demanding answers. (b) (3) 10 USC and SgtMaj got them to the heritage room and began calming them down. We got the CACOS with them.

At some point we had Marines heading to the North Shore HFD/HPD responded. That led to civil involvement. That led to a command post a Haliewa harbor. The squadron put together a 44 man working party with MWSD. I think they were up there by 0700-0800. Now about this time we were getting phone calls. We were coordinating with 3d Marines to send folks up there. 3d Marines sent busses up there.

Q: How long did the search last?

A: I think we suspended the search on the 19<sup>th</sup>. We made a conscious decision to walk the beaches until Thursday. We were expecting the search to continue. We wanted the whole package to remain up there until Friday.

Q: Was there debris washed up?

A: Very little washed up. Mostly HDP and HFD picked up a few pieces did show up on shore. A piece of a cowling. A piece of a camel back. Tons of calls for expected debris. The majority of the debris. Pieces of cowling, 8 flight helmets. Most of that came quickly.

One of the slides in the briefing pack had the USCG modeling. They came up with several scenarios to determine the drift. They were able to track the wave patterns. By early morning Friday, I think it was Sunday before one of the buoys made it to the north shore. It was 2.5 days after the mishap. It gave us

They were able to track the wave patterns. By early morning Friday, I think it was Sunday before one of the buoys made it to the north shore. It was 2.5 days after the mishap. It gave us an indication that we wouldn't get a whole lot of debris washing up.

Q: After the 911 call, was USCG pretty responsive?

A: Very responsive. They had a combination of boats, herc, hh 65. The first ones on station was an HSM aircraft. It was a busy night that night.

Q: How did they get tasked?

A: I don't know, maybe tower tasked them. USCG took incident command response and set up watch center at 14<sup>th</sup> dist hq at the fed bldg. By 0800-0900 we had an LNO, (b)(6) (b) (3) 10 USC § 130b in there.

Q: At this point, USCG on scene. What other assets?

A: Army/P3's.

It sounds like you had lots of assistance.  
HFD and HPD

Q: Where are you now? It's early.

A: Bounced around here and 463.

Q: When did you tell the Wing CG?

A: About 20 minutes after arriving here. I called him back.

Q: What was his response?

A: Very calm. What do you need for help? Calm professional, focused. What can we help with?

Q: Who determined how to call off search?

A: Two star admiral. I think Atkins. He delegated that to (b)(3) 10 USC, (b)(6), (b)(3), his deputy. The way they work it is probability. They work search patterns and survivability of an individual. They estimated five days survival in the water. Based on computer modeling and it goes into active search suspension. They thought they would work it through Monday. They worked up to USCG Commandant who was briefing Gen Neller. When they wanted

to call the search off, the PCR process would not have caught up. This allowed us to work a slow process of announcement of suspension and working with families.

Q: The decision was made to suspend and you kept Marines up there?

A: Yes Friday. Then we kept a five man detail for five days. One of the models had Kauai. We had a team standing by. We sent a gunny on commercial air to retrieve pieces.

Q: Search suspended? When transfer of remains?

A: Our flight surgeon handled. The flight helmets were transferred to (b)(6) (b) (3) 10 USC § 130b is responsible for the ME. I don't remember how the remains were transferred. Flight surgeon transferred.

Q: Each helmet had DNA?

A: Yes. 8 helmets and 7 PID. Boot with some bone sticking out. The HNL ME would take control of the remains. That was another learning point. We got HR pouches sent up there. We would use a govt vehicle. This was another set of discovery learning. The only remains we discovered was the initial.

Q: In the salvage process did you found some more?

A: Two substantially intact remains.

Q: Are those in the vide?

A: I don't recall. I don't think I've seen all the video. I think (b)(6), (b)(3) From same site, they had portions of disassociated remains. (b)(6) (b) (3) 10 USC § 130 sent to Dover.

Q: Do you think we will be able to ID all 12?

A: There's a good sign. We found (b)(6), (b)(3) Pegasus 32 a/c 06. Pegasus 31 a/c 05 more intact. We're not doing salvage and recovery until after suspension.

Q: How long did that take?

A: A lot of the assets that were pulled together. Interagency task force. MDSU 1 had the rhibs and ROVs to do the scans to help locate the debris field.



Q: What does it take to begin a salvage?

A: Naval Saft Center. USCG lost an H65 in the last two years. (b)(6) (b) (3) 10 USC § 130 was working with his counterpart at PACFLT. The prep work was already starting to go. I don't remember how many days until the official request went out. MDSU 1 still mapping the site as coordination. Debris field 240 feet to 340 feet. Start with MDSU guys until we could get deep water salvage assets in following approval.

The Salvor was the one doing the salvage efforts. (b)(6) (b) (3) 10 USC § 130 was able to coordinate with PACFLT. The Navajo was a support ship to the Salvor. AS the planning went on we ended up getting only the Salvor. As it turned out, the ships couldn't be moored together.

Q: Since the mishap, conditions create risk for the recovery, Did that delay the salvage process?

A: It did. The biggest sticking point was the ROV that MDSU the torpedo looking thing. The sword fish could do sonar scans. Then send the ROV after the hits. Where initial reports were debris was above the 300 foot mark everything was below 300 feet. That was attributed to the swells. That allowed us to get the Deep Drone 8000.

The rover couldn't maintain position due to currents. Toward the last couple days of the SAR effort. Put it up stream and it drifted through.

Q: Would you say the ongoing salvage is efficient?

A: I'm very happy with the process. The only friction point is because we have so many folks involved, there is extra coordination. I don't think the salvage could have been started. Deep drone requested. Navy side was asking why the deep drone was requested and when. If we would have gotten deep drone 8000 out here earlier. A C17 brought it out, Once they got approval.

Q: So PACFLT working close with MFP?

A: Yes. The only sticking point was MDSU and us finding stuff below 300 feet.

Q: Every week you updated the CG and families?

A: So when the SAR effort was going on, as early as 15<sup>th</sup> and 16<sup>th</sup>, we updated the families and squadron. We would meet at the EOC at 1800. Everyone would synch up there and we would discuss. "What should we tell them?" We'd meet at the chapel at 1900. We would have grief counselors. (b)(6) (b)(3) 10 USC § 130b would give an opening statement, turn over to (b)(6) (b)(3) 10 USC § 130b. Then we would open it to questions to families.

Q: How were those?

A: Overall the feedback was good. It was tough. There were portions that were contentious. That eased up over time. They were getting more confidence. Every night we were talking face to face.

The night we suspended search. 50-60 Pegasus guys lined up to shake hands with USCG. Where the wheels came off, we were doing daily PCRs up until search suspended. At this point some of the families departed. The memorial service was Friday. Everyone assisted. Then we were getting pinged by families. We were getting face to face briefings, now nothing going on. Once we found out, we were doing a daily PCR with a salvage update to families. A Teleconference helped out. We opened it to them. A couple of families opted out. The CACOS are there. Some families want information. Some don't until their sons are recovered. When I did conference call, I do a prep with CACOs. To discuss the remains piece. Some want details, some don't. We have HQMC casualty branch to answer questions and the whole staff in the room. I did have one call yesterday from CACO of (b)(6). Other than teleconference I haven't had direct contact with CACOs. HQMC casualty branch is very tightly controlled.

Q: I want to talk about 463. I'm not privy to the command climate. It's up to (b)(3) 10 USC if he wants me to see it. (b)(3) 10 USC said it's up to the CO to release it. When did you notice 463 had some challenges?

A: Where it got concerning. I see my 3m brief there. Yellow RBA. Executed flight hours. The one in August where all of a sudden some red flags started popping up. MERF D, three phases, three a/c inherited from west coast. Eventually it was painful then they were turning the corner. They kicked the second MERF D out, the COC was February AFB 346 hit. AFB 345 the ramp portion. So many things stacked against them. They crushed it

on the CNAF inspection. Good sign things are on track. AFB 346 hits as we were kicking out birds to MERF D. Fuel lines, chafing, wires. It's a mess. 463 was the first ones to make this happen. I think they were a strong maintenance department up until this time. They lost a lot of strong SNCO's. MERF D and 4 best flyers sent out the door. They lost SNCO leadership. WTI out. You're out of tool kits. Only three bags. You're basically down to single ship maintenance. Where the red flags come up is August. (b)(6) (b)(3) 10 USC § 1301 is set for WTI. (b)(6) (b)(6). They shift to (b)(6) (b)(3) 10 USC § 1301. He's the focus. During that time, in July they're at 40 cans per month. Aug they're about 60 cannies. AFB inspections were completed, but parts were the problem. From July to August we had lots of cannies, Red flag one, the cannies. Started to get grumblings of people coming on Saturday, in August another thing happened. They had night crew working on an engine. They were supposed to motor an engine. Lit it off and torched an engine. When they dug into it they had a CDI a Sgt doing the procedure no book open.

Q: Essentially they were not following the proper procedure. Were you notified about that?

A: I was the next day.

Q: (b)(6) (b)(3) 10 USC § 130b ?

A: He PCS'ed right away after that.

Q: Was there an investigation?

A: I wanted to determine exactly what we were dealing with. In reality it was a mishap. Because of IMRL resources it took about a week to get a sling, another week to tear the engine apart. As soon as they pulled it apart it crossed the threshold. The Class C invest still sitting at wing.

Q: That happened in August?

A: Yes, Now August torched eng, grumblings of Saturday work, MERF D, skeleton crew back home, WTI. Now there are a few indicators. But no need for drastic intervention. Until inspection. 18 off track and the report is abysmal. Concerning to a high degree. I talked to CG and ALD. I was at the Majors board at this time. Typically we see 75 to 76 percent. 80 passing. Their percentage was 50 percent. It wasn't the failure, it was the attitude. We got this thing nailed. Folks



that should have been out supervising were in shops. Morale issue, supervision issue.

Q: Was CO trying to address this?

A: The out brief was Thursday; I got a call from (b)(6) (b) (3) 10 USC § 1304 on Wednesday. There's safety issues in maintenance. When we talk about safety of squadron. They appeared methodical. Not unsafe when came to flying. Maintenance wise. I talked to CG. I made the call that we would shut them down. Get well plan, MALS help. For 21 days there was a focus on programs. The MALS inspection went well. Then the AlMAT. The re-inspection went well. 94 percent. They did very well on re-inspection and that was their whole focus. Only one off track.

Q: This was September and Re-inspection was November?

A: In October had MERF D return. Airshow.

Q: In October there were a few things going on?

A: The class C in the hangar. Wash rack engine light off, swash plate gouging. We can't find it yet, but playing the downer game.

Yes, in October. I gave two priorities. 1. Pass the inspection, 2. Get readiness situation back to where it needs to be. They ended up being conservative. I think it was 23 24 Sept until they started ground turning planes.

Q: What are pilots doing?

A: Not doing anything.

Q: Would you say day jobs became a priority?

A: I don't know. You have to keep them busy. 100 percent sim utilization etc.

Q: Do you think they were doing that?

A: I would say I don't have visual on day to day. Morale took a beating by pilots. Coming in planning and there's no way we are going to fly. I started to see other squadrons hitting 50 percent. Prior to the commanders conference, the contract from (b)(6) (b) (3) 10 USC § 1304. Focusing on what you can control and what you can't. Ops maintenance contract. I shared with the squadron



and we discussed. The contract gave a framework. So not a daily fight between schedule writers and AMO. (b)(6) (b)(3) 10 USC § 1301 thing was if you hold them to 50 percent RBA rule it will hurt initially but you can do it. At the commanders conference, (b)(6) (b)(3) 10 USC § 1301 and (b)(6) (b)(3) talked. 463 and 367 applied that lesson learned.

Q: Did that ops maintenance contract ever come to fruition?

A: No by September to October, I don't think they ever had an RBA a/c. The ops maintenance contract is good once you get to 50 percent. Typically they had two RBA. For me a good day is 4 RBA.

Q: How does the squadron submit a get well plan to you every day?

A: I have the AMO develop it or screen it. The CO sends it to me. I want an update in the AM and CO brief by end of the day. One of the lessons learned by (b)(6) (b)(3) 10 USC § 1301, if you have 2 RBA your efforts will focus on those. Everything else will fall aside.

Q: Where was leadership to bring up RBA?

A: That's really the crux of it. At the end of the day. (b)(3) 10 USC § 1301 was relieved there was no direction to change the culture. Now we're Oct/Nov timeframe. You kept (b)(3) 10 USC § 1301 in the AMO pos.

Q: Was anyone in maintenance department fired?

A: No. (b)(6) (b)(3) 10 USC § 1301 attitude was highlighted. I directed CO to look at the maintenance department I wanted a recommendation. (b)(6) bad paperwork, moved to MALS. He was sent to Phase crew. No bad paper. Another thing that happened was there was no PKL. They didn't have a trained TD coordinator to replace him. Look you have to send a signal to the other SNCO's. Along those lines. Swash plate issue. AC 09. They were working on a lateral bias axis coordinator.

Q: What happened to the Sergeant that was waiting for a CDI?

A: He gets impatient and sheared off pins. Required P&E. That was another indicator. I thought he would pull his qualifications. Pull the stamp. I was looking for accountability. There was resistance from CO, AMO, Consensus was it was harsh. It was that whole attitude. We were just going to give him a verbal accountability.

Q: Speaking of holding people accountable. 15 November a/c comes back closed field. Did the crews know the procedures?

A: Blow down before declaring an emergency. There's a culture that's afraid of using gear. Exercising the system. They returned single ship on a Sunday. The SDO is the Opso. No CFR and pax on board. If I was CO and somebody launched without me knowing. I'd probably pull some wings for 30 days. I don't know what happened to those pilots. You can't affect change unless he holds people accountable.

Q: Was CO aware? When you pull that thread. There was a culture of lack of accountability?

A: I agree with you. I knew it afterward. I never followed up with CO. I didn't get it from him. Got it from OpsO. Texts and chain while event going on.

Q: 650 hours behind of flight hour goal. Was he feeling pressure to do flight hour goal?

A: No. I've never been any press or put pressure on commanders. The only pressure applied was to fix RBA.

Q: When he went to commanders conf. Did Gen Sanborn talk with him?

A: CG's visit in September was a full hour discussing readiness with (3) 10 US.

Q: Was he affecting change?

A: He's very detailed. He's very focused on the technical aspects. He wasn't taking a macro view.

Q: Would it be safe to say readiness. Inability to manage a get well plan and incorporate change?

A: Same thing over and over again. He wasn't doing the things to change culture. I would say he didn't do analysis on root problem.

Q: When was decision made by CG to relieve him?

A: First indication was November, Probably November 23. A phone conversation with CG. CG asked me how long do I put up with this? I said I don't know when will we turn the corner. The reports were the same. I just couldn't defend it any more. CG

said February is what I'm looking at. (b)(6) (b) (3) 10 USC § 130b was due on deck. Next inbound CO. I told (b) (3) 10 USC your job is riding on this at that time.

Q: During that week, 12 on 12 off started?

A: Yes, During December we have POTUS. Things had been going bad. At one point we had 5 RBA. Two back to back dets. Kauai, PTA. 8-21 Dec PMRF det planned. 8-11 Dec PTA. They were doing interisland CCXs. So going into December, we're not turning the corner. Things are bad. December they hit rock bottom. During the holiday period, they ground turned a single a/c. 0 RBA the whole second half of December.

Q: Who recommended 12 on 12 off in November?

A: I told him at the end of the Thanksgiving 96 we're going to go to 12 on 12 off. He said ok. If you want I will tell all of your SNCO's and officers it's me. He said no. I'll take ownership of that. He said Friday night after Thanksgiving. My goal was 6 RBA then work to 8. I wrestled with 12 on 12 off. I think during BITS I got a call from the CG. He came out that Monday. He made the call.

Q: It was a surprise?

A: Yes. He was working to move (b) (3) 10 USC Decision was made. Arrangements were made. I didn't push back at that point. There was nothing I could defend at that point.

Q: On Wednesday you have the in-brief with (b) (3) 10 USC?

A: I had an acting letter for (b) (3) 10 USC. We needed someone to run the squadron. Pro/cons and promotions. Just to ensure someone was in charge. The year prior we relieved the CO of 367 it was a mess. We gave him an acting letter to ensure someone in charge.

Q: You had a frag. Recovery from Big Island, he's signing two nights in a row heavy duty night schedules. Were you tracking that?

A: I was. We've got MERF D on the horizon. They had weeklies. We have to start flying. If we get RBA aircraft. Some of the getting people back into training you have to fly at night.

During the weekly, they shaved it down to the daily. On the schedule, they had (b)(6), (b)(3) hadn't flown in 90 days on goggles.

Q: Yet he's signing for an aircraft. Was there oversight from the MAG?

A: No I don't get the hog board. That's why we got msharp, orm worksheets, with all sets of eyes.

Q: But if you had known. You would have said...

A: There are checks and balance at the squadron level. They did lots of mitigation by stacking the deck with experience.

(b)(3) 10 US walked through timeline. The squadron didn't do any favors to those guys. The expectation is I have two WTI's and squadron looking at this.

Q: Are you familiar with the cookie cutter tacex?

A: Not totally. Encroachment, the head scratcher I got, when you look at scenarios. The amount of WTI's etc.

Q: What is the squadron doing when they aren't flying? Not updating briefs etc.?

A: When you see a decline in moral. You see a decline in qualifications. What I'm seeing is the average s shop guy.

(b)(6), (b)(3) was told all you do is study. The AMO was put in the 4 to chill out before MERF D. I should walk into a clean hangar.

Q: Was there toxic leadership in SNCO level in maintenance department?

A: Clear SNCO's were stove piping efforts down there. A few I suspect are not carrying their weight. The QA chief is an Ordinance guy. Someone in maintenance control has nothing but I level experience. That is another big symptom of problems there. The maintenance chief should be involved. The guy supposed to reign in all of the SNCO's.

Q: What about the Sergeant Major?

A: He's a grunt. Leadership morale, mentorship. What I have seen is that the Marines have a good respect for him. They have lowest discipline problems of any problem.



SUMMARY OF INTERVIEW WITH

(b)(6) (b) (3) 10 USC § 130b

Conducted in person 18 February 2016 at MAG-24

I was the (b)(6) (b) (3) 10 USC § 130b until mid-December 2015. I served as the Operations Officer for the squadron and the AMO prior to my time as XO. I also served as the MRF-D ACE detachment OIC from March through October 2014. (b)(6), (b)(3)

, (b)(6)

I had a (b) (6) in August 2015 that caused me to be out of the office while recovering during the month of August. I was (b) (6) and couldn't fly based upon the (b) (6). (b)(6) (b) (3) 10 USC § 130b and (b)(6) (b) (3) 10 USC § 130b (SP? Correct - yes) were covering down on XO issues while I was (b) (6).

I recall being surprised by the failure of the ALMAT inspection in September 2015. The maintenance staff was solid leading into the summer of 2015. I do recall it took a while to get the MRF-D aircraft back together after post deployment maintenance in 2014. The squadron had a lot of turnover in the SNCO and leadership positions in the maintenance staff during summer 2015. I got the sense that the incoming leadership hadn't had the time or ability to achieve cohesion and really become acquainted.

I know the squadron had sustained issues with low RBA during the end of last year. I speculate that some of the contributing factors were the AFB announcements about the fuel line replacement and again with the tail rotors disconnect issue, these maintenance related issues were CH-53E fleet wide. We had a few aircraft that were RBA capable but were affected by the fleet wide Air Frames Bulletins.

I got the sense that while conducting the required daily and turn around (D&T) maintenance on an aircraft they were finding issues that would render the aircraft not mission capable and then downing the plane because of that issue without completing the rest of the D&T. So, the maintainers would fix that issue and then the plane would get downed again for another D&T that could have been identified during the original inspection. This cycle could have been avoided if the D&T was completed originally.

The low readiness of aircraft available resulted in decline in flight hours that lead to pilots not being able to achieve qualifications. As a result, pilot proficiency suffered. It also meant that whichever pilots needed the quals soonest for WTI or MRF-D, etc were constant repeats on the schedule so they could get their X's. This meant other pilots got bumped. We were aware of the impact on pilot progression,

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it was noted and we tried to account for it the best we could. Operations was aware and were putting X's on the schedule to try to ensure progression for all aircrew.

When the squadron got shutdown after the ALMAT failure, the guidance was to continue training on the flight simulators. However, to my knowledge our squadron was not given extra hours in the simulator schedule. It is my opinion that the entire 53 community is hurting on proficiency because of the limitations we were dealing with. The squadron was continuing to fly and get quals on paper, but it doesn't necessarily marry up with the actual experience level of the pilots due to fewer than normal flight hours per month. The squadron had a near-term focus on the next issue on the horizon such as NSI, WTI, or getting ready to push out the next detachment.

I was aware of the digital /s/ being used to sign the flight schedules instead of ink signatures. I don't think it is the best practice, but I am confident the right people were seeing the flight schedules. I am not sure when the /s/ practice was implemented. I do not think it was abnormal for the squadron XO to continue pressing with the flight schedules once a CO is relieved, he is a trusted individual with the authority to command in the CO's absence. I am not aware of selective scheduling practices, but I believe there was smart scheduling that accounted for legitimate issues such as proficiency. Even with the maintenance issues, the guidance for schedule writers was to keep planning and we would make changes to the flight schedule according to the reality of the readiness the following day.

It was not normal practice but not uncommon for enlisted aircrew personnel to be present at portions of a flight brief, but be absent for other parts due to other commitments or collateral duties, i.e. D&T and getting the aircraft ready to fly. Enlisted aircrew were typically always present for flight briefs. The aircrew who are getting X's should always be present at the entire brief. It is not unheard of to brief a flight a day or two prior to a flight that got canceled or rescheduled, but a month gap would not be acceptable.

I recall the issue with the hung gear on the cross country flight back from the Big Island. That crew got delayed for maintenance issues the day prior and had to remain overnight at PTA. They would be coming back single ship the following day, a Saturday. The CO told the pilots to not pull the Emergency Landing Gear blowdown bottle. I wasn't comfortable with the decision to wait but I also didn't know the CO's reasoning behind his decision process, it was due to his prior experience and the second order impacts to utility hyd system failure. I was not present for the ready room confession of (b)(6) (b) (3) 10 USC § 133. I know



the ODO was in communication with the aircraft getting updates, the ODO called me and I told the ODO to tell them to conserve fuel and continue to recall the Chain of Command. It was a closed field. I am not sure if the Ops-O knew they were coming back or if he knew they had a closed field.

(b)(6) (b) (3) 10 USC § 130b is a very smart and technically oriented CO and pilot. He is very intellectual and known as a "test pilot" type of personality. His personality is not as approachable as some other Commanding Officers I have served with. I am not aware of (b) (6) firing anyone after the maintenance inspection failure. I do think he held people accountable however. (b)(6) (b) (3) 10 USC § 130b was replaced, and moved into a different position, but not fired to my knowledge. I do not think (b)(6) (b) (3) 10 USC § 130b inflated reports or numbers to make things look different or better. He came to the squadron and took ownership of the issues. He never passed the buck up the chain. However, there was one incident that hurt morale when the AMO had already passed a plan of action and milestones to improve RBA, and then the CO passed a more aggressive timeline.

When the 12 hours on / 12 hours off order came down, it was recognized by the squadron staff that the marines were actually present for duty for longer than 12 hours. They were working weekends as well in the beginning. I recall it started with the night crew coming in on the Friday of Thanksgiving week. The FOD Walks were not mandatory for all hands, but it was encouraged. The maintenance meetings would go during FOD Walks.

I was surprised that the CO was relieved based upon the readiness not improving quickly enough. I was privy to the results of the command climate survey. Overall, the unit thought the CO was doing a good job and cared about them. There was a sense he was doing what he could under the circumstances. It was understood that the direction to work more hours was to get readiness up again. However, there were also sentiments that there was a lack of cohesion and bonding in the SNCO levels of the maintenance personnel. There was a sentiment that junior officers were not empowering SNCO's and the junior officers were not forwarding feedback up the chain of command.

I believe there is a systematic problem with there not being a large enough pool of people to draw from for replacements in times of need here at MAG 24. This is unique based upon our geographic isolation and the fact that this MAG only has one squadron from each airframe community. In California or North Carolina, there are sister units to lean on when needed. The squadron also gets tapped for a lot of collateral assignments; competing priorities, FAP's, rifle range,

marinenet, medical, dental issues etc. So, the number of people on the rolls is not reflective of the actual count who are present for duty on any given day. If we have a lack of experience or a void and want a replacement or plus up, it is challenging to get the required manpower. This has been discussed with higher HQ, but often the answer is the replacement is a junior marine requiring training. The squadron loses qualified individuals due to PCS, SDA, or EAS and do not always receive someone in return that is of the same technical level.

Bottom line low readiness impacts aircrew proficiency.



## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

April 2015-October 2015 MERF D OIC

(b) (6), 1 December returned and turnover with (b) (3) 10 USC § 130b. 18 Dec in position as XO, East Coast, 302, HMX, Echos, phrogs, Left HMX in 2014 with refresher in between.

Q: Does the squadron have a TEEP?

A: Yes, we based our campaign plan off the MAG's 2 year campaign plan. When I checked in there was a plan for me to get completely refreshed. (b) (3) 10 USC § 130b was looking at me and (b) (3) 10 USC § 130b to take the Det. (b) (3) 10 USC § 130b went to the DSS and I went to the S4. Yes we had a TEEP and we used the two year campaign plan to support. I checked in right after RIMPAC 2014.

Q: So you weren't around for the ALMAT?

A: No.

Q: Did that come as a surprise?

A: Yes. In hindsight I can see I was deployed and got the word we failed. (b) (3) 10 USC § 130b came out to the MPC at MERF D and we were discussing the failure.

Q: (b) (3) 10 USC § 130b came down and talked to you about it?

A: He did. He took responsibility. I think the gist was he had the CNAF and MALS were successful. He trusted his SNCOs. We had almost a complete changeover, PCS when I was deployed. I deployed with 4 SNCO's from the squadron. You lost (b) (6) (b) (3) 10 USC § 130b, etc. (b) (3) 10 USC § 130b airframes came with me to MERD D.

Q: Did you see the cultural workshop that MFP did?

A: I did I have a copy of it.

Q: Do you agree with some of the comments?

A: Absolutely. The communication piece, Coming back reintegrating Oct/Nov. We got the results in Dec. The communication piece. Lack of leadership in MC. The other thing was a lack of trust the SNCOs had in the junior officers. I have specific examples where the trust may have been shaken. I think they didn't trust their (officers) calls in maint. I think they were second guessed on their calls as CDQ's. Example: November AC Gear emergency.

I got a phone call from the opso saying we are executing ng the mishap plan. We have an a/c from big island that can't get the gear down. I asked if they tried the blow down bottle. Call me when you do. They did a ready room confession thing. (b) (6) (b) (3) 10 USC § 130b wrote an approach article. About an hour or two later the blow down bottle worked. A couple of things stood out at me. I

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didn't realize to what extent the squadron was scrambling to assist these guys.

Why did they call you?

A: I think (b) (3) 10 USC just to inform. When I was learning about the situation. I found out (b) (6) (b) (3) 10 USC § 130 an Airframes CDQ was on the a/c. He told the hac to blow the gear down. Took the hac over an hour to blow the gear down. Turns out there was a short or a wire that was loose.

Q: So it was closed field?

A: It was. It was a weekend.

Q: There were pax on board?

A: I believe so.

Q: Is that legal?

A: Not without the MAG CO approval. I'd have to check on that.

Q: It's one thing to screw up EP's but with pax on board and you have to notify everyone? Did the CO know they were coming back closed field?

A: I believe so. I was on leave however.

Q: You've been in the squadron a long time. At some point you've got (3) 10 U at Merf D 1, go there and succeed. We can look at readiness, there's a point where readiness drops. Jan 2015. Every time, I ask everyone, when did you see a trend? If you could say a downward trend, where did the hairs on your neck stand up?

A: I'd like to speak about the culture. Dec 2015. Christmas particularly.

(b) (6) (b) (3) 10 USC § 130b. He was the AMO at the time. It was (b) (6) That period the AMO was going

(b) (6)  
He was continuing to come to work. (b) (6). I removed myself from LV in Jan to spend time. (3) 10 U simultaneously was going to Tripler. I went to LV for two or three days. My brother came in' to assist. I got signed off for Section Lead. My NSI check was 2nd week of Feb. I came back and immediately went to the MPC for MERF D. Our readiness was excellent there. Dec right before Christmas was the max launch.

Q: You came right off the CNAF?

A: Which we did well on. In hind sight I thought (b) (6) (b) (3) 10 USC § 130b (b) (6), (b) (3). 8-9 February Fleet Support, January-Lava Viper. My NSI Check was Feb. In March (b) (6). Again I was surprised that the AMO was not sent to MAG or given a reprieve. The new CO got a positive pass down from (b) (3) 10 USC I did brief (3) 10 U on it. I left for MERF D on 4 April. We chopped to MERF. On the deployment, I kept regular contact with (3) 10 U

Q: How did the AFB affect you?

A: The MERF D a/c were 100 percent priority. We need to ID our five a/c immediately. I left in April with 4 afb 346 complete. AFB 345 was to be completed in the next phase. You sent (b)(6) (b)(3) 10 USC § 1 on the deployment.

Q: His departure affected flight line?

A: Yes. EO comments. He was replaced by (b)(6) (b)(3) 10 USC § 13. A new air framer who had just checked in. He came out and basically became the maintenance controller.

Q: CO and SgtMaj were tracking (b)(6) (b)(3) 10 USC § 13 travel back here to HNL?

A: I don't know. I was in daily communication with CO and SgtMaj.

Q: So you get back in Oct. You stay as a det and build up the four planes?

A: I did and also wanted to look out for them for time off. I was talking to (3) 10 U and (b)(6) (b)(3) 10 USC § 130b was reluctant to give us a 96.

Q: How big was your maint det?

A: 69 from squadron.

Q: The reason he wanted everyone back was having up a/c?

A: Yes. The 27th Oct we built up two. 04 and 12 were flying within two weeks. A retrograde decision was not made until Dec. But I believe the wing wanted to fly the a/c back. The boat coa fell apart. Darwin has no on off capability. I was asking to commit to strat lift in August. We supported on Sept 15th. (b)(6), (b)(3) last night flight. The decision was made to keep the det separate until the a/c are tested up. Yes by 23, 24 Oct. Which is right before the air show.

(b)(6). Columbus day was taken from the Marines. We got to have two up a/c for the air show. We lost Columbus Day. I was hearing guys dreading going home. Can we stay here the whole time? We flew 550 hours. We had four RBA. People were anxious to go home, but no one wanted to go back to the squadron. Lots of work ahead of them, and no time off.

The Marines knew they were getting their weekends taken away. I know they were hurting for personnel. So, Columbus Day right before air show, we worked Saturday and Sunday then the Columbus Day. Mostly all of November I was on leave which I planned to take leave through the Thanksgiving 96. That I believe was a turning point for morale a low. (b)(6), (b)(3) took over as AMO during that period.

Back to (3) 10 U. (b)(6), and when we failed the maint inspection. I was surprised he was still in the AMO position. We talked about his job when he visited MERF for the MPC. (b)(6) (b)(3) 10 USC § the AAMO had PCSd as well.

Q: Did the CO seem comfortable leaving (b)(3) 10 U in that position?

A: In June 2015: AAMO PCSd The feeling I got in Sept, we got to make the flight hour goals. (b)(3) 10 USC wanted us to keep flying in Australia.

Q: You were carrying the water for the squadron?

A: Yes.

Q: But you came back on Oct 4, and that squadron had been grounded. Sept 23 was the first ground turn. You are hundreds of hrs. behind?

A: Right off that bat we're starting to get behind. By Oct we are hurting. They knew there was a reinspection.

Q: So there was pressure to get your guys back and reintegrate?

A: (b)(3) 10 U said you will reintegrate prior to the reinspect. (b)(3) 10 U said make sure your stuff isn't fucked up. So quite frankly sir, the field grade was getting concerned there. I was surprised that the CO and (b)(6) were not removed. We had no AAMO. I was never really concerned about my job.

Q: What did Oct look like?

A: I was in 101 building up a/c, Some 2k2 times. Probably a couple of frags.

Q: Yes or no, did the CO get in the cockpit of the gear emergency?

A: No question. This is based on his recollection of telling me. So I took over Dec 18th as XO.

Q: Now you also have an XO (b)(6)?

A: Yes August.

Q: When did you get your acting letter?

A: I received it on the 12th.

Q: Did you do an NJP during that time?

A: I did.

Q: What were the circumstances?

A: The Marine was NJP'd for insubordination to an NCO with a pattern of misconduct.

Q: Is that why you got the acting letter? You signed the 11th for the 12th? Who noticed that?

A: I spoke with (b)(6) (b)(3) 10 USC § 13. I had a verbal, He asked what I needed. I needed an acting letter. I got on the officers my fellow field grade on things like acting and by dir. I thought they didn't understand that. (b)(3) 10 US tried to sign



a couple of things by dir. When the CO was relieved on the 11th. I brought it up.

Q: Now with that, you did the NJP on the 12th?

A: Yes

Q: Was SgtMaj pushing it?

A: He was

Q: You have a PCO on deck. Why the rush?

A: It seemed like nothing slowed down in the squadron that week.

Q: Before you go to that. Did the relief come as a surprise?

A: I knew about it the week prior....

Q: How did you know?

A: Friends at MAG 16. Expect to see the Gen on Monday is what I was getting. (b)(3) 10 U was completely off guard. So I struggled with my loyalty to him to tell him or not to.

Q: Did anyone else know?

A: So I can tell you about Thursday and Friday the 7th and 8th. I had a conversation with (b)(6) (b) (3) 10 USC § 130b on Thursday. And I detoured and intercepted him for about an hour and a half in the hangar. So this was on the 7th. He was explaining what I should be doing to help (b)(3) 10 U. Get him out of the office, now not the time to career enhance the Marines. How about 0800 and I will come to your office. (b)(3) 10 US said. Then I texted buddies at Mag 16. Got an email from (b)(6) (b) (3) 10 USC § 1 on 7th. He offered up ways to assist because you guys are struggling. He said you guys need to take care of (b)(3) 10 U. I showed up at work early Monday. I got an email from (b)(6) (b) (3) 10 USC § 13 Friday morning. Saying could you give four names of Marines to recognize for a MAG coin.

Q: Before I go further (b)(3) 10 US is telling you to tell the CO to get out. Was there a disconnect between the CO and the Marines. His door was open, but he was always in there. He never shot the shit with the Marines?

A: He did FOD walk and that was it. He never went to the maint meeting. He said I don't want to get in their shit. There's no question that (b)(3) 10 U was visibly frustrated with our readiness. AMO was in there every morning...

Q: Do you think in light of the cultural workshop. Your CDI's would go out and find downers on planes to remind people they have some control?

A: Yes. So during my time in limbo. I walked around. We had an a/c down for swashplate chatter. I wanted to see. I asked control, and they said (b)(3) 10 U (b)(6) was on the a/c. Go out to the plan preflight and fire up the APP. I deployed with (b)(6) (b) (3) 10 USC § 130 and another QA find binding in the aft mixer.

It took them 15 minutes to find it. This was on the board for maybe 6 weeks. So three of us diagnosed the aft mixer. I think corrosion. So I'm walking back in and thinking this is taking too long. It's been written up for weeks. We got to get the experienced guys out there looking at these planes. So we're shooting the shit. He said, I've never seen SNCO's trying to spike MC. So I spoke with the CO. I think there was a VGA link that was out of limits via micrometer. There are inspections and periods of inspection, not in between inspections.

Q: So they are doing D&T and finding 50 hour items that are out? How did the CO fix it?

A: He had a squadron formation. (b) (3) 10 USC tough with crowds. Better one on one. If you see a downer that's ok. The gist was it may have come off the wrong way. It may have been better to work this with AMO or CDIs not an all hands formation.

Q: Was the CO directed to fire SNCOs?

A: Yes. (b) (6) (b) (3) 10 USC § 134 was recommended. He ended up going to phase. (b) (3) 10 USC went to flight line. My understanding was (b) (3) 10 USC recommended to the MAG CO to transfer him and (b) (3) 10 USC was transferred as well.

Q: That was (b) (3) 10 USC? What was he like?

A: (b) (6) (b) (3) 10 USC § didn't like him. He was a maint controller. It was tough for him to make the jump to MMCO from being a controller.

Q: He never got bad paperwork?

A: I think he was transferred to MALS and he had a turnover.

Q: Do you recall anyone being held accountable during (b) (6) (b) (3) 10 USC § time?

A: Not that I'm aware of. Tightened up.

Q: Their primary job becomes their day job, not being a 7566?

A: No question.

Q: I want to talk about the NJP.

A: The SgtMaj said we gotta NJP this guy. We've been waiting forever.

Q: What was the relationship between the SgtMaj and the CO?

A: They continue to be good friends. I overheard a counseling the SgtMaj's fitrep. The squadron was loose. Late start to staff meetings. I felt too laid back.

Q: You know the standard cookie cutter route in jumps, the HLL guys were flying the same route as the LLL guys. As you talk to the copilots they didn't do planning? Three x's in one hour?

Q: Did you ever see after MERF D were they chasing x's?

A: Absolutely. (b)(6), (b)(3) was pushing x's at MERF D. I cancelled numerous initials. That was our culture. I was frequently at MERF D scratching X's. (b)(6), (b)(3) was at MERF D pushing x's. He's a good guy. The mishap schedule is full of all times of errors. Put an S in there. By the time the schedule gets to you as acting. In the binder, everyone's previous signature is with the schedule for signature.

Q: Was (b)(6), (b)(3) the right guy to be the section leader on the mishap flight?

A: In hind sight no.

Q: Was the squadron placing too much trust in their WTI's?

A: I personally wasn't. I think WTI's are in huge esteem in our squadron. I've heard copilots say that the focus is WTI. I personally trusted (b)(6), (b)(3) because of his experience 1000 hrs. total 250 goggle hours. Total NVG time: (b)(6), (b)(3) 11.7 last 90. (b)(6), (b)(3) 0, (b)(6), (b)(3) 2.8. That's in 90 days.

Q: Do you feel that the squadron..

A: I think the priority was getting (b)(6), (b)(3) goggle time. The section lead check was.

Q: Was there a thought to get a warm up for (b)(6), (b)(3)

A: He flew a 3.0 on Tuesday. I wasn't concerned about (b)(6), (b)(3) He hadn't flown at night since September.

Q: But (b)(6), (b)(3) was tired?

A: He was tired. Part of the reason (b)(6), (b)(3) was on there was because the other pilots were busy.

Q: Why didn't the squadron stop flying?

A: We had a frag on Tuesday. So (b)(6), (b)(3) 10 USC § 130b was talking with me Monday 0800. At some point (b)(6), (b)(3) 10 USC § 13 would want to talk with me. He said business as usual. I said two turn two on weekly.

Q: So you had a plate full?

A: Your point is the MAG XO and CO said to keep business as usual. So the next day (b)(3) 10 USC showed up to fly. I talked briefly on the 11th. He and I talked about an hour. NJP, an acting letter, and the rest of the week HAC check. Did a HAC check that week.

I called the Adj. He said the wing Jag is on deck. You are cleared hot to NJP him. (b)(6), (b)(3) 10 USC § 13 was the MAG Adj.

I asked (b)(3) 10 USC if an acting letter covered NJP. Let me call the adj and ask him. You're cleared hot on the NJP. I talked to him about the HAC check. He's

been ready for over a month. (b)(3) 10 US was ready for his HAC check on Wed night. If we're going to fly, let's do a 1 turn 2. That was the guidance. Keep doing what you are doing. Also on the 12th I sent the sitrep to (b)(6) (b)(3) 10 USC § 13. Tues Frag: VBSS to LSV. Told MAG CO Wed Thursday doing a 1 turn 2.

Q: So, did you see them brief?

A: No.

Q: Is it normal to break up a flight brief with a CO inbrief?

A: No. In the bubble, Generally you brief and walk. (b)(6), (b)(3) had to go back and review with the copilot after the 1700 in brief. I didn't know that. Assumption of command letter. He signed on the 14th. So I signed the schedule on the 14th. Between the brief and the hac check on the 13th. When I got back (b)(3) 10 USC said (b)(3) 10 US was surprised that you signed the flight schedule. I saw him the next day and said. He said yes. As of yesterday the MAG CO said I've got it. I asked have you signed the letter of assumption of command? I called our S1 (b)(3) 10 US and asked he get the letter.

Q: This is Thursday?

A: I received the letter. The CO told (b)(3) 10 US to change the date to the 13th. His letter is dated 13 Jan. He signed on the 14th. Dated for 13th. That is the explanation of me signing the flight schedule.

Q: In your dialogue with him, he did sit in on an AOM on the 13th. What time was that meeting?

A: 1600 Wednesday.

Q: Did he think he was in command?

A: Yes.

Q: When he came to the RR did it come to attention?

A: Yes, I was told by (b)(3) 10 US via text that expect (b)(3) 10 US to occupy the office next week or as early as Thursday. So also on the 12th. Part of my conversation with (b)(3) 10 US I asked if I could reach out to (b)(3) 10 US. I started ccing him with correspondence to MAG CO. (b)(3) 10 US said he was going to show him around on Wednesday. So after that (Wednesday) 1300 he said lets go to lunch. He sat down with SgtMaj and me at lunch. We had an AOM at 1600. We almost had daily AOMs at this point. At 1600 I asked if he were attending the AOM. I reviewed dept. head stuff. Welcomed (b)(6) (b)(3) 10 USC § 1301. He spoke briefly. I signed the flight schedule and I went and flew. I reviewed for about 30-45 mins. Did the ORMs and walked.

Q: So in your mind, you're still the acting CO?

A: Yes.

Q: But in hind sight he had been told by MAG CO he was in charge?



A: Yes. It's kind of blurry. To me he wasn't the CO until you sign the assumption of command. At the end of the day, you think you're in charge, but at the MAG you ask someone, they say (b) (3) 10 USC is in charge. Text from (b) (3) 10 USC 1803 Tuesday: Expect (b) (3) 10 USC to occupy office Thursday or Friday.

Q: That was Tuesday night?

A: Yes, I was scheduling a piss test.

Q: How was (b) (3) 10 USC with that?

A: He said ooo.

Q: When did you find out about the mishap?

A: 2320. (b) (6) (b) (3) 10 USC § 130b called. He was making calls for the ODO. I think we have a mishap. There are reports of a fireball on the north shore. I immediately called the CO. Woke him up. Walked in 2345. (b) (3) 10 USC was running the show in the ready room. 0030 OPREP 3 released.

Q: Can we have a copy of your timeline?

A: Sure. 0125 this timeline was released.

Q: In your opinion did you hit the mishap checklist?

A: In my opinion yes. If I knew CACO was waiting for PCR I would have spent more time. They hadn't received the PCR. We had handed it off. (b) (3) 10 USC took it. That could have been handled better. Part of the agony (b) (6)  
(b) (6), (b) (3) showed up on my office at 0200.

Q: How did they know?

A: I think their husbands were overdue. Texting

Q: Have you looked in the back and seen guys texting?

A: Mostly HAAR. Sitting in the back I've never seen guys texting. Human factors.

Q: You knew all these guys? Strained relationships?

A: No.

Q: Did you ever selectively schedule?

A: Not here

Q: Anyone can fly with anyone?

A: Absolutely. We would pair for skills. A copilot said, our peer group is not ready for combat. We can't land at night. I agree.

Q: Do you feel that we are creating a generation of pilots who are atrophying?

A: 3 hours a month is not enough and they are not proficient. As a copilot these guys are not getting it. Anytime we do bounces the copilots are thankful.

Q: Did the CO ever address this?

A: His primary concern was time for copilots.

Q: Yet all the flight time was going to NSis and MERF D?

A: His brief to copilots was when they checked in. I owe you 16 hours a month. I want 20. My goal is to get you HACd in a year.

Q: What's the plan for the squadron for these guys. Are they going to get FFPB'd. Does the squadron do lots of waivers for instrument?

A: Yes

Q: How about sim utilization?

A: We max it out.

Q: Are we doing the right training there?

A: I think in the last four or five months. They are trying to build some tactics scenarios. There's lots of stuff you can do with it. I like to do natops checks in the sim. My natops checks in the sim are a full two hours.

Q: So tell me about the recovery process?

A: (b) (6) (b) (3) 10 USC § 1 honchoed that. That morning from 5am to 11. I'm doing CACO stuff. I met (b) (6) on the front porch. We waited till about noon. No word. Her family pastor came.

Q: Going back to the morning of when the CG relieved (b) (3) 10 USC. Where did he do it?

A: My understanding was the MAG CO's office. (b) (3) 10 USC came back after that to his office. (b) (3) 10 USC showed up at 0800. (b) (3) 10 USC was still there.

Q: Did he know it was coming.?

A: I think he was waiting for him. (b) (3) 10 USC stayed for another two hours. I saw him on email. His fiancé came in. I think (b) (3) 10 USC was waiting for him to come back. I sat in my office.

Q: Did he tell you why he was relieved?

A: Yes. He said that essentially it was readiness. He said the General lost confidence in my ability to lead the squadron. Basically readiness.

Q: So the general came at 1600?

A: Yes. He came over to address the squadron. CG walked right over to me.

(b)(6) (b) (3) 10 USC § 1301 with him. He said, I'm sorry. How are you doing? Under the circumstances, we will improve the squadron. Small talk. Then he walked to the school circle. Probably talked to the Marines for 15 to 20 minutes. The first thing he said was an analogy of a ship captain asleep and running a ship aground by XO. CO accountable, he made several other comparisons.

(b)(6) (b) (3) 10 USC § 1301 was to break glass not backs. Not a cookie cutter solution to every problem. Talked about his last assignment as suicide officer. Commandant asked. Then used his kids as an analogy. There is no cookie cutter solution. At one point I thought he was wrapping up, someone handed him a microphone and he continued to talk. Working longer isn't necessarily the solution. Take a hard look at where you can make improvements. I don't think the Marines were necessarily engaged with this. He grabbed me after this and he told me that MERF D was a huge success. Division had great support. He asked me some questions. How are you going to bring some of that success to the squadron. We didn't speak again until Saturday after the mishap. He and I had a 45 minute sit down in the squadron. Saturday or Sunday, it was all about MERF D, is there really a heavy lift requirement at MERF D. He was about a year behind on the AAR's. What he was mentioning was AARs from the first MERF D. I told him there was no requirement for heavy lift at MERF D. I think the CG was getting questions about what the true heavy lift requirement is a MERF D?

Q: Was (b)(6), (b)(3) experiencing HF issues?

A: Distracted. Lots of stuff on his plate.

Q: So you're saying dept. heads, keep the throttle on, keep pressing?

A: I feel like we backed off. I asked for (b)(6), (b)(3) slides for the Friday in brief by noon Thursday. After he took over he was working 10 14 hours every day. Almost daily he was sending a maint email to (b)(3) 10 U. He was always in the morning maint meetings. I wasn't expecting the slides from (b)(6), (b)(3) I asked for them from the AAMO.

Q: When did you do the inbrief to AAMO?

A: Probably after the memorial. The 25th.

(b) (2)

Q: Maintenance Ops Contract, It never came to fruition?

A: correct.

Q: It's like he's trying. But the a/c never came up?

A: You had this culture of maintainers downing birds. He was feeling pressure on that. He was told you will never be fired for readiness. Lets talk about what (3)10U relayed to me in his frustration with the CG. When he got relieved, he was asked if he had anything to say. (1) he thought it was a bad decision (2) he said he was (b) (2) because of his copilot situation. Well I'm a single seat guy, I don't understand that. 462 had a great deployment. The CG's got this det in Okinawa and he didn't understand that. Their AMO was grilled on our readiness. Gen Sanborn sat down and grilled him on our readiness. Then we bombed our inspection. There's nothing that he would necessarily change. (b) (3) 10 USC is the smartest guy in the room. Did he not see the toxic SNCO's. Did he not do preinspection. He's a test pilot. Your RBA is flat lining. I think he saw that we were improving. Where we are today, he saw that in December.

Q: What changed?

A: We made some personnel changes. I think he trusted (3)10U. He trusted (3)10 , (b) (6), (b) (3). He's been there too long. After BITS there were several SNCO's moved.

Q: When you returned from MERF D and you integrate back to the squadron, where there things in the squadron that were safety of flight concerns? Were there maintenance malpractice concerns?

A: I was part of the symposium of the climate workshop. I felt like this was the worst flying squadron I have been a part of. I haven't left the cockpit for 15 years. I had a feeling that something bad was going to happen. This is the first squadron I've been a part of that had a class a. I thought we were going to have a catastrophic component failure because the a/c were getting old. After deployment, I began to have more confidence in the a/c. I just didn't like where we were.

Q: So morale was low?

A: Which the SgtMaj was in denial about.

Q: Why?

A: It was right in his face. He took that as a reflection of him. We are identifying some things. (3)10U expressed that he was a little worried about them. I felt like we were trending up. I have no idea of where the order to work 12 on 12 off came from. I attribute that to (3)10U maybe shielding us. Some of the guys in the survey asked why the CG wants us to work 12 on 12 off.

Q: When you do flight briefs is the whole crew briefing?

A: Yes. That would have been expected. Exceptions to that were hot seats.

Q: Were you privy to any anonymouses?

A: Yes. The DSS would take it directly to the CO.



Q: Was this an average number?

A: Yes.

Q: But you would see all of them?

A: Unless the DSS took it right to him.

Q: Toxic SNCO leadership, low flight time. You would assume a spike in anymouses?

A: I think maybe two in the last month.

Q: After MERF D, do you think it was a pretty ambitious flight schedule?

Yes

A: One of those copilots was getting a few x's signed off. I don't think that was uncommon. It's feast or famine.

Q: So you guys are struggling with RBA, then you find out you're doing 12 on 12 off. What was it like telling the Marines to come in Thanksgiving weekend?

A: I was on leave.

Q: The HAC check on Wednesday. A/C 06 AFCS issues. Heading. That was the only noteworthy thing. GPS working fine?

A: What I have been noticing, not sure if the HACs know how to use the INS.

Q: Are the pilots proficient in INS?

A: They turn on they are getting ground speed and EGI.

Q: How did the CO mitigate everyone's fatigue. How did he keep people focused? Was he doing it? How was he maintaining approachability? The CG lost confidence. Where was it that the CG lost confidence?

A: I would say that he wasn't exactly cordial. I was joking with (b)(6), (b)(3) and (b)(6), (b)(3) You didn't have conversations with him because it would expose your stupidity. I can relate to it because after a stan board he asked what do you guys determine about OPC's. I sort of felt like I was getting grilled. Why are you doing them up there (big island)? He said that's what sikorsky tells you. I said that's what we're taught. Yeah but that's what GE tells you. He brought up the crash in Afghanistan: They found that the power degradation was greater.

Q: Talking to the copilots. Some of the stuff was non-standard. The joint up was non-standard. I understand timelines and the other stuff. Was the squadron getting complacent? Were they cutting corners? They didn't brief certain things.

A: I don't know about the complacency part But I think maybe some overconfidence from the NSis and WTis. You gave a NATOPS check the day before. He went over everything. The night of the mishap. You got a tired guy briefing. Non-standard join ups. Day prior (b)(6), (b)(3) did the night lab and flew the sim. His flight leadership was not a concern for me. I wasn't concerned. As far as I was concerned.

Q: Why all the crew chiefs in the back? What was the thought process?

A: Proficiency, Some fly three nights in a row(Z) they are getting worn out (Z)the externals was a piece of it too...

Q: Was there some safety concern. (b)(6), (b)(3) arguing?

A: Wasn't briefed to me.

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## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

6 Jan received a call from BG Sanborn. It was either going to happen one or two ways.

Q: Did he give you the opportunity to dissent?

A: Yes. The straw that broke the camels back was pre Christmas 15 aircraft and had 0 RBA.

Q: Was it a cold call?

A: (b)(6) (b) (3) 10 USC § 130b called and asked if I liked HI. He was my last boss. I was supposed to take 361 in April. Then I got a call that it was delayed by 6 months. That Wednesday (b)(3) 10 USC § 130b said be around the phone. The Gen called. BG Sanborn called. When if I did this would you like me out there. He never mentioned a certain day. He told me not to tell anyone. (b)(3) 10 USC § 130b was going to be relieved on Monday. He told me to keep it quiet.

When did Gen Rocko get read in on the plan.

Q: When you were out at MAG 16, how were the readiness rates?

A: 465 tough. 462 had just returned from Oki. (b)(6) (b) (3) 10 USC § 130b. 462 had just turned it around. I assumed 463 was struggling like 465. Fleet wide our readiness has been bad since AFB 346. The fuel lines. 343 fuel lines. 346 was fuel lines and entire a/c. 346 really crushed the community. What I understand 463 got the MERF D a/c out the door. I saw the pain that MERF D entails. You take a third of your a/c and fly for six months. It hurts the hours overall. Each squadron handled the AFB a little differently. My general impression is that the AMO had HF issues. (b)(6) (b) (3) 10 USC § 130b. QAO went to MERF D. The AAMO PCSd in the summer. Over the summer, nearly every division chief all senior SNCO's PCSd. (b)(6) (b) (3) 10 USC § 130b predicted the maintenance inspection failure.

I called him on Thursday 7 Jan. He said he would be on island Monday 11 through the 14<sup>th</sup>. Friday I texted and told him I'd be out there by Tuesday 12 Jan. Tuesday I arrived. They set up a meeting on Wednesday 12 Jan 1730 to 1900. I received his command guidance. The following day, Wed 13 Jan, I spent all morning doing admin check in. I met with (b)(3) 10 USC § 130b at 1230 to 1400ish. After that went to the squadron for the first time. As I was walking in to the hangar I was surprised. Ran into (b)(3) 10 USC § 130b doing a hac check.

ENCLOSURE (118)

So you had the afternoon with (b) (3) 10 USC then you went to the squadron...

I didn't sign the flight schedule for the 14<sup>th</sup>. There was a little confusion.

Q: When you left (b) (6) (3) 10 USC § office, you knew you had it.

A: Yes. The letter. I signed on the 14<sup>th</sup>. It was dated the 14<sup>th</sup> back dated one day to 13<sup>th</sup>. One of the things we never did do, I think at some point (b) (6) (b) (3) 10 USC § 1304 asked me. Handing me the squadron colors.

You sat in on an AOM on Wed afternoon. You were in your office and XO asked if you want to join us.

Q: Why didn't we stop flying?

A: I was the commander. The guidance I received was don't change anything. Take about two weeks to observe the squadron. I went into it with the assumption that the problems were down stairs. Not in the ops shop or ready room.

Q: So you're under the impression that you're the commander. In the meantime your XO is receiving guidance from the MAG?

A: To be honest I know that the squadron received marching orders to observe. I think everyone was surprised how quickly I got out there. I didn't think it was essential to cancel the flight schedule. For them doing a section lead check. (b) (6), (b) (3)

One of the harder things I had to do after the mishap was to talk to the families. Did you know my son. With the exception of (b) (6), (b) (3) I don't specifically remember conversations with any of the mishap crews.

The day of the mishap. (b) (6), (b) (3) approached me. We are having maintenance problems. Seemed concerned about his job. Spoke with (b) (6), (b) (3) three times.

Q: What did the Gen tell you why (b) (3) 10 USC was relieved?

A: Failure to produce RBA. Inspection failure, passed a re-inspection but not terribly well. One SSgt moved. But not any huge changes had been made.

Q: Was there anything that stood out?

A: Readiness. I think he was under the impression that the squadron wasn't working hard. What I told him subsequently. I met with the young Marines about a week after the memorial. 12 on 12 off was more like 14 on 10 off.



The goals weren't clear. No one knows the goal. So there's a culture. Morale was low. Lowest morale I've ever been in any unit I've ever been in.

Effective communication does not exist. Distrust in the unit. Of pilots. Even (b)(3) 10 USC questioning QA on processes. Scheduling failure. Two turn two turn two when you only have one up a/c.

Unclear goals and requirements. Communication from control to the shops. Something we're working on now. There was a command climate problem without a doubt.

The bottom line of why we were flying. I was somewhat uncomfortable. The squadron had been flying. I didn't know how little they had been flying. I've got 6 NSI's after mishap. They were averaging 2.3 per month.

I didn't think the problem in the squadron was in that arena.

On the flight schedule. They have the digital S.

I don't know if it's because of the AMB or these interviews. It's become a topic of discussion in the squadron.

On Thursday night you had the 1700 in the theater. Spoke about 45 minutes with them. I went back to the squadron till about 2200. Phone call came about 2320 from (b)(3) 10 USC. It confused me a little bit. We had an a/c about 15 to 20 minutes past due. The schedule had them back at 2330. Called the MAG CO and told him about the fireball call. At some point I spoke with (b)(3) 10 USC. He said you too. Meaning that there was a skid mishap on the big island.

By the time you got to the squadron. (b)(3) 10 USC had the ready room covered. Everyone was doing everything they were supposed to do.

I didn't know how important the PCRs were. Our PCR didn't get out of the house until 0500 to 0530. (b)(6) (b)(3) 10 USC § 1304 and (b)(6) (b)(3) 10 USC § 1304 go them pushed out.

Q: Did you hear rumors about crew chiefs texting while flying?

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

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

I

would tell you it's not all uncommon to text updates etc.

So now you're in the middle of the mishap. The PCR is about to be launched. The same time the MAG is launching people to the

north shore. The USCG is on scene and the command site is set up.

And we had gotten a ton of bum gouge the entire night. We were told about things washing up on shore. Mainly just trash from the big surf.

To be honest, the feedback I got was the Marines didn't really find much of anything.

Q: How would you say the response from the USCG was?

A: Phenomenal. HSM had a crew out flying. I'm sure they extended. They were the first on scene. They told us there wasn't anyone they could pick up. HNL fire/police/DLNR. On day two I started calling family members. (b)(6) (b) (3) 10 USC § 1304 from the USCG assisted in the 1900 briefs to the families.

He needed the primary NOK to talk with during a search. Each phone call lasted an hour. He gave great support.

Q: So the families were getting the best information they could get?

A: (b)(6) was upset.

After the search was called off. MDSU 1 said there was about 300 feet. Did you hear a delay.

I understand the family complaints. I understand there was miscommunication. AS much as I understand the sub was requested as early as the second day. HQMC needs some more messaging. What I was getting is that the Marine Corps policy is burial at sea. I have a hard time believing that. I think we did everything 100% as well as we could have through the memorial.

The PCR is a misstep. As a CO you need to be concerned about the PCR. I was good sending it down range as good as it was. The PCR didn't match our flight schedule. When I saw the rough PCR at 0500. I think it was accurate and the best info we have.

Q: Do you think there was pressure building on (b)(3) 10 USC up into the holidays? Were you aware of the 12 on 12 off starting on thanksgiving?

A: I haven't been told. The LCpls will tell you 12 on 12 off since Sept. Some Marines will tell you Thanksgiving. Higher thought 12 on 12 off but it's really 14 on 10 off.

Right now. Maintenance meetings at 0700. Don't arrive at least half an hour prior to the maintenance meeting. We are doing pm maintenance meeting at 1630. Probably about 10.5hr days. I want to try to shorten that. Before I do that I want to sustain

50 percent RBA. One of the things I've done, cancel the flight schedule if we don't have 50 percent RBA. On mishap day, we had five RBA. We had 3 RBA when AMSRR went out at 1000. So report card goes at 1000.

Post mishap we did a week of maintenance. Work 50 mafs for each in reporting aircraft. I told them maf count should be 50 per.

They got into a zero defects mentality. I told them they are doing business by the NAMP and MIMS. Frag loading here is higher than on the west coast. I heard some petty issues between SNCOs in shops. Command climate says QA was questioned by the CO.

Q: Are you familiar with the blow down bottle?

A: Glad you asked. I tell everyone to use the checklist. We had an a/c returning. (b)(3) 10 US was on the radio with the HAC. Had him concerned that you were pressurizing the system and contaminating the hyd system. Follow the natops. The whole vignette...go through the natops. They had guys underneath the a/c trying to pull the gear down. If it's held up by hydraulics. I told the squadron to just blow the gear down. Follow the natops. As the co I'm not going to trouble shoot from my office. I fundamentally don't understand.

Q: We still can't figure out who authorized them to return to a closed field with pax?

A: I don't know.

We're also tired.

About a week after the memorial I sent the general an update. Moral low, poor communication, goals weren't communicated. I've never been in a squadron where the Friday liberty formation was 1600. Here it's more like 1800 1900. If we were trying to get to MERF D. We'd be breaking the squadron. The fact that MERF D came off was probably a good decision.

Q: Do you think the squadron was given every opportunity Wing, MALS, MAG, MFP, PMA261, TYCOM?

A: What I have seen is most of our problems have been internal. I don't know how (b)(3) 10 US didn't change out (b)(3) 10 US in January. The road to hell is paved with good intentions. How they gapped the AAMO billet all summer. How they failed as many programs as they did. A SSgt gets fired. How (b)(6) (b)(3) 10 USC § 130 is still in his position. He's an "I" level guy by trade. You don't have a sister squadron to do drug deals with. A lot of our problems has been maintenance control. In the safety assessment QA was

generally praised. Everyone pointed at maintenance control. A combination of weak control. My control chief (b)(6) (b) (3) 10 USC § 130b is the right guy. (b)(6) (b) (3) 10 USC § 130b I knew from the past. He came from SDA. (b)(6) (b) (3) 10 USC § 130b got kicked off MERF D. (b)(6) (b) (3) 10 USC § 130b took control. I was astounded how junior my control shop is. In addition to lack of officer supervision. Holding the Marines accountable. I was worried about (b)(6) (b) (3) 10 USC § 130b (b)(6) (b) (3) 10 USC § 130b thinks (b)(6) (b) (3) 10 USC § 130b can be a good control Chief. (b)(6) (b) (3) 10 USC § 130b was a divisive influence and part of the problem. Even before the mishap maintenance had started to turn the corner. Different AMO (b)(6) (b) (3) 10 USC § 130b was put into place. MC was a problem for the squadron. That ties into the moral, the readiness, etc.

I think we need to work on our messaging with respect to the salvage. Post memorial once we declared them deceased. It would be picking at a wound if we did a daily update. We made a decision. I should have asked each family member do you want a daily update or know when we know.

Discovery learning by MAG etc for the salvage.

Overall he had concerns over how the salvage was handled. Everything I asked for, I received.



## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

26 Feb 2015 - 11 Jan 2016

He found out about the mishap from missed call from MAG CO at 0300.

(b)(6) (b) (3) 10 USC § 130b called back the MAG CO at 0500 when he woke up on the 15 of January.

Told the CG he made a mistake with relieving (b) (6). "Marines will make up aircraft for the wrong reason." This will put Marines at risk. (b)(6) (b) (3) 10 USC § 130b was completely surprised when he met the Wing CG. Came into the MAG CO's office with a brief he prepared on Sunday for the Monday brief and was told he was relieved on 11 January. (b) (3) 10 USC § 130b was ordered not to talk to the Marines or Officers. Returned to the squadron to get his things and witnessed the MAG XO talking to (b)(6) (b) (3) 10 USC § 130b

First conversation (b)(6) (b) (3) 10 USC § 130b had with MAW CG was at the MAW CG's change of command. Discussed what could be done better with MRF-D with regards to bringing aircraft out there. Takes five weeks to prepare an aircraft to be brought out to Australia and then two weeks on the back side for build up. (b)(6) (b) (3) 10 USC § 130b does not believe HMH-463 should have been removed from the MRF-D rotation.

(b)(6) (b) (3) 10 USC § 130b discussed personnel challenges with regards to (b) (3) 10 USC § 130b and pushed to group and no one to fill as a good flight line SNCO OIC. Also (b)(6) (b) (3) 10 USC § 130b being removed after the inspection and getting no replacement.

Wing Inspection, which was failed, seemed more detailed than normal. Programs were off track because initials were on a form and not a signature. Almost like the inspectors were trying to fail the Squadron. (b)(6) (b) (3) 10 USC § 130b took full responsibility. When questioned regarding leaving the AMO in the billet after the family tragedy (b) (6) (b)(6) (b)(3) said that the Marines rallied behind the AMO and he was better off working extra hard as a way to deal with the situation.

AFB 346 (fuel lines, hydraulic lines, and wiring inspection) came out in February and the Darwin Aircraft were the number one priority. Lack of tools from IMRL gear leading to effecting readiness. (b)(6) (b) (3) 10 USC § 130b was talking to the Marines and most felt like it was groundhog day if you were not going to Darwin. Attempt to instill a pride in the patch. (b)(6) (b) (3) 10 USC § 130b talked with (b)(6) (b) (3) 10 USC § 130b of 462 regarding Maintenance contract, discussed this with group CO.

Prior to Thanksgiving, MAG CO said they needed 6 RBA aircraft or they would be going to a 12 on 12 off schedule. (b)(6) (b) (3) 10 USC § 130b protested. When they didn't have 6 RBA they decided based off of November schedule that it would be best to come in and work the Saturday and Sunday of the inspection. Felt absolute pressure from higher (Wing and

ENCLOSURE (119)

Group). In late December MAW ALD called 4-5 times down to Maintenance Control for updates on the aircraft readiness. (b)(6) (b) (3) 10 USC § 130b discussed the difference in SORTS and DRRS reporting. Standard on Readiness and Training (SORTS) was inflexible. Other squadrons were looking at DRRS like a report card and over reporting and under executing. He would not report T2 until he had 16.5 hours a month per pilot. (b) (3) 10 US (b)(6) discussed the reset as a colossal waste of money. Cannot compare the CH-53E to the CH-47 because there is still a factory creating parts. (b)(6) (b) (3) 10 USC § 130b discussed flaws with the 419 engine and the overtemp when flying with (b)(6), (b)(3). Talked about the three anonymous complaints and how they were handled. Command Culture showed SNCO's had problems especially with getting along with junior officers. (b)(6) (b) (3) 10 USC § 130b felt like he had a good pulse of the squadron and what was going on around him. Discussed MALS issues and how it took a month to get an engine off of aircraft and inspected. Sims were well utilized and no selective scheduling. (b) (3) 10 US (b)(6) pointed out the biggest human factor pilot on the mishap flight was (b)(6), (b)(3) due to the pressure of being a maintenance officer in squadron who's CO got relieved for Maintenance. (b)(6), (b)(3) (b)(6), (b)(3) to him in tears expressing sorrow of what was happening to (b)(6) (b) (3) 10 USC § 130b discussed (b)(6), (b)(3) not wanting more quals but was great in the aircraft. Talked about potentially academically testing him to see if there was another reason he didn't want to take the tests.

SgtMaj relationship with the CO was described as a great relationship. SgtMaj also had a really good relationship with the squadron. Squadron PT was done to get shops to work together and build moral. Even got to do HELOCAST for the squadron. (b)(6) (b) (3) 10 USC § 130b set goals with (b)(6), (b)(3) (b)(6), (b)(3) (AMO), didn't want to work 12 on 12 off or weekends. (b) (3) 10 US (b)(6) downgraded the last three DRRS reports, to avoid over evaluating and underperforming.

CG command visit was in September. (b)(6) (b) (3) 10 USC § 130b did not receive a lot of guidance from the MAG CO, (b)(6) (b) (3) 10 USC § 130b, with regards leading up to him getting fired. MAG XO discussed with (b)(6) (b) (3) 10 USC § 130b the need for him to get out of the office and see the Marines, walk around, sit in Maintenance meetings. (b)(6) (b) (3) 10 USC § 130b felt sitting in the maintenance meetings to be counterproductive and lead to a sense of micromanaging and not trusting the officers and SCNO's. (b)(6) (b) (3) 10 USC § 130b opinion was the flights of the Mishap day should not of happened because of the shock the squadron was in due to the CO being relieved.

## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

24 February 2016

Q: When was your coc?

A: Feb 26 2015.

Here is a copy of your readiness. The green spike in flight hour execution. I think you took a det to the big island. Then you came back and focused on the change of command. (b)(3) 10 USC takes over, and you see the flight hour execution.

The flight hours went down. That coincides with AFB 346.

Q: Was that during your time as CO?

A: Yes. I remember a discussion with (b)(3) 10 USC. Then we discussed supporting MERF D. We could canny to get a/c ready. We were still in the window.

Q: So when you turned over. Morale was high?

A: I felt like the squadron had come together. We had four groups in the squadron. Echo guys and three Delta groups. But I felt we were pretty cohesive. 31<sup>st</sup> MEU. MERF D. RIMPAC and a low point of readiness. But then Nov thru Jan everything came together. After Jan we were at our flight hour goal.

Q: When did you start noticing 463 and have concerns? They're starting to struggle?

A: I want to say probably June. I took leave and was at the MAG in April. Feb to June they were recovering from 346. I started to get concerned in June. I heard that from the squadron they were going to be the first to recover from 346.

Q: What do you attribute that to?

A: A focused effort. Good maintenance crew. (b)(6) (b) (3) 10 USC § 130.

That was before PCS season.

After the CNAF in Dec. You had the COC in Feb. By June all the key billets in the garage were swapping out. So by June they're hurting?

ENCLOSURE (120)

It was still recovering from 346. They were trying to get back on glideslope for flight hours. I advised (b) (3) 10 U.S.C. and (6) (b) (3) 10 U.S.C. § 1. You shouldn't be trying to get back on glide slope.

Q: So they had an aggressive schedule to get back?

A: Right.

Q: When did the COC for the Wing go?

A: I think July.

Q: The AWC. Did he ever come out?

A: They have not done the seminar. The XO's safety forum was the last time he was out here. Let's see. December...I think it was quarterly.

Q: Did you have conversations about readiness?

Everyone was talking about 463's readiness at that point from the outside looking in. Through the holidays they had two or three weeks of zero RBA.

Q: I'm curious the Wing's deputy comes out. You have copilots falling behind. Were there discussions about proficiency?

A: I don't remember specific discussions about proficiency. In an indirect manner... most of the discussion was about readiness and how do we fix them.

Q: What was the answer?

A: The parts of the frustration from MAG and Wing late fall to December. In June I was questioning what was going on. Getting up on flight hours. A decision was made at the squadron level to fix the critical, major, and minor discrepancies. I want to say maybe it was that June July timeframe they determined in phase they were going to fix all the major and minor fixes. That bogged down the phase timeline.

Q: Whose decision was that?

A: I think (b) (3) 10 U.S.C.

Q: Did that get pushed down by higher?

A: No that was our internal decision making. They came out of 346 and had a/c ready for MERF D. They cannied back here.



There was a spike in the summer. The MAG CO noticed. There was a spike in cannies. That decision to work all the MAFs in phase. The phases were taking three or four weeks to work off the other discrepancies. That led to low RBA a/c. Things are going to get better soon. There was a period of limping along. And then in the initial parts...

Let me ask you this. Did they have a get well plan if they're below 50%?

The MMCO is sending one to MALs. AMO and CO sending to MAG.

Q: Who allowed them to fly below 50 percent?

A: MAG CO. Through the early portion of summer. Still had Frags. Those threw flight hours as well.

Q: Would you say the frag load is disproportionate?

A: Yes. Single squadron here. 3d Mar/Rad Bn/1/12. You basically have a .75 supporting that. You are short of assault support. There's no trade off. No sister squadron. Like back when the D was here.

Q: Would you say the same for maintainers? You have a controller and you can't fire?

A: No one to trade personnel with. We've got what you've got.

Q: Hypothetically you have a FL Gunny who ends up at the MAG?

A: Right.

Q: Would you say the MAG has lots of 53 pilots up here?

A: Compared to the manpower we need to operate. We have a pretty good share.

You have a MATTS guy. You got strong horses up here.

(b)(6) (b) (3) 10 USC § 130b

Q: With the AMO's (b) (6)

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

Do you think in hindsight did you recommend to (b) (3) 10 US to replace him with a MAG guy?

A: Right. That was a difficult time. In hindsight I wish I pressed (b) (3) 10 US more about (b) (3) 10 US. Was he being back stopped. Initially he had a flexible schedule. No long term plan for him. By summer he was AMO for a year.

Q: So you have his HF issue. You have (b)(6) (b) (3) 10 USC § 130b. He's out for months. I'm looking at changeover. (b) (3) 10 USC is out there...is he asking for help?

A: No. He didn't bring that up as a manpower issue.

Now when (b)(6) (b) (3) 10 USC § 130b was pulled for an IA. We had (b)(6), (b)(3) at MAG HQ after talisman sabre. (b)(6) (b) (3) 10 USC § 130b were coming from the squadron. Don't know if we talked specifically about (b) (3) 10 USC §. But you had (b)(6) (b) (3) 10 USC § 130b. Which would be weird.

He had (b) (3) 10 USC over there and he carried on over the summer. June July they were... (b) (3) 10 USC was disengaged. I found out (b) (3) 10 USC PCSd and was not backfilled as AAMO.

Q: Would you say they were not forecasting their officer billets? No one's looking and programs and you have a swap out.

A: Right everyone who stood the CNAF was gone.

You can see some things happening...Class C engine? Right.

Q: Let me ask you a direct question. Did you hear about personality issues in maintenance? Downing planes?

A: Yes. I think that came up in Nov/Dec. Some maintainers were loose cannons. That started to come up. VGA vanes out of limits. Basically we are doing work on engines that are performing well. Also planes on a test status. Oh cure time cracked cowlings, oh now specials, oh on the wash rack. Specials should not stop you from testing. There definitely was visible to ALD. You see a/c that haven't flown. Could only have been caught on the last flight. But people are digging.

Q: Did wing ALD call down directly to the squadron?

A: I think MALS. (b)(6) (b) (3) 10 USC § 130b was getting questions.

Q: But you don't recall direct calls to the squadron.

A: I don't know.

The torched motor came up. As well as..that happened in Aug...so the engine got torched before the maintenance inspection. Spent a long time being looked at both at o and I level. Then the maintenance inspection was "worst results ever" then after that was when it became clear that the engine was a class c mishap because of the parts that had to be replaced at the I level. That came out right after the inspection. That created a lot of heat.

Q: Did you see finger pointing?

A: Not on the engine. But there was a "what was taking so long". Was it the delay for the sling.

It took a month to change out that motor.

I didn't know that they were not doing QCU's over there.

I believe they are going to start again.

So that brought a lot of heat on the squadron. If we reported it as a possible mishap when it happened...the timing right after the maintenance inspection. Failed inspection then you report the mishap right after that.

Q: Let's talk about the inspection. We've talked to MAG CO. Was there...at what point is the wing putting the screws to the squadron? Or are they talking to the MAG and putting heat on the MAG?

A: The wing was not pressuring the squadron. I'd say wing was pressuring us. (b) (3) 10 US was talking to the squadron.

There was not a head lopping going on. I felt with as bad as the maintenance inspection went. No one was fired. It was fix it and here's the time frame we will come back. Talking to the guys at the squadron they were surprised. The focus was on the re-inspection and make sure it goes well.

Q: Did wing hit them as hard?

A: I heard after the first inspection that it was detailed. You can make inspections go worse depending on how argumentative you are.

Q: Or if they find a block house full of stuff...

A: Right. I don't think the re-inspect was as intrusive. And the results were better. I didn't see indicators from the squadron that it was unfair.

Q: Did the MAG CO place goals. Say how many a/c need to be up?

A: The focus was re-inspect. After that it was the get well plan and the readiness level. We were looking at Feb. They need to be healthy. The mark was on the wall. I think 1 Feb.

You're like ok they're in the cross hairs now?

Q: Are you looking at the RBA every day? Late Nov/Dec.

A: I had a sit down with (b) (3) 10 US. What help do you need.

Q: Is he approachable?

A: I think one on one.

I don't get the impression that he connects with the junior Marines. From his demeanor and some of the things he focuses upon. A lot of in depth discussions that are over people's heads. He had discussions in an all hands formation talking about angles of the tail rotor disconnect and angles necessary. I think this is mid-November, we were having the discussion the squadron needs to be producing. Things need to improve. We were getting hey we're close. There's no discussion about the plan. There was not a vision. Never a plan. This is where (b)(3) 10 USC told (b)(3) 10 USC we need to see increased production. You need to go 12 on 12 off.

Q: Did they ever do that over the summer?

A: No there was never an official call to go to 12 on 12 off. Throughout that time period they were working a lot of weekends. And I know it wasn't always planned out. I know it wasn't always briefed up to the MAG. I don't think they went to 12 on 12 off until (b)(3) 10 USC told him to. I do know right after the failed inspection I talked to the COS (b)(6) (b)(3) 10 USC § 134..hey do they know this is a big deal. They weren't burning the midnight oil. Jumping forward to Oct/Nov timeframe there were a lot of weekends being worked. And they weren't briefed. I'd get the weekly from ops on a Sat afternoon. Hey are you just in on the weekend? Nope we're here working. Oh the squadron's working? Yes. I know that was starting to grind on a lot of people whether spouses or Marines. This is just sucking and they couldn't plan their lives. Now (b)(3) 10 USC directed they go 12 on 12 off. He offered to go tell the squadron that it was his idea. I don't know how it was framed. But after the fact I don't think they thought it was (b)(3) 10 USC idea. No ownership of this. It was completely up to them and (b)(6), (b)(3) had just come in as new AMO. They decided to start on the Thanksgiving Saturday and Sunday with the goal of whatever RBA. We're going to get to four and work our way up to six. That was indicative that they thought it was a short term problem and they were going to surge for a short time. To the extent the Chaplain approached me that Marines were concerned about Christmas and new years.

I talked with (b)(3) 10 USC about this.

He talked about NSI checks. I told him you need to cnx these nsi checks. He said he already made the call. It was putting undue pressure on the squadron. I told him don't work the Christmas or New Year 96s. You've got to tell them now. Tell them the plan.



Q: So they came back first week of Nov? They think we can do this. So after the re-inspect there's a spike in readiness....do you think the squadron focuses too much on NSI WTI and not on the basics?

A: Yes. The higher level quals were getting all of the focus. And the way they were scheduling. So in December, they asked me to come over and do a I think it was a gun shoot and AR. It was scheduled as a 6.5. I was taking a good number of people out there. We have an a/c, we're going to pack as many people in there Day night. Whiskey 194 down south of Lanai. We delayed getting out of the chocks and I had to cnx some of the flight. That's a long fucking day. Day into low light. All the pilots they're not getting the touches.

Q: Would you say they were chasing x's?

A: Yes. I feel the ops dept was overly aggressive. Packing as much as they could into the flights. Basically if you fired up the plane you were going to fly an entire bag of gas...

Q: Most likely it would be as seasoned crew?

A: Yes.

Earlier on, might be back during inspection timeframe. Got over and the a/c was filthy. I spoke with (b)(6) (b)(3) 10 USC § 1. This thing is nasty. I haven't seen planes this dirty in a long time. We're out of rags I was told. I talked to the MALS CO right after that flight. I wasn't entirely clear why it hadn't gotten to a higher level. Why does the MAG XO...I think everyone was just heads down. So the a/c is just filthy.

The night of the mishap, (b)(6), (b)(3) had to do a damper check. 15 minute penalty turn. You flew with the squadron. Were there times you went to the a/c and the plane wasn't ready?

Overall I'd say yes. a/c 06 for example. I flew the gunshot ar. Lots of up gripes. Pain in the ass to start. Pen start. Use emergency to kill it. But if that's one of only two flyers...

I flew 05 the Tuesday before the mishap.

Q: You're a former CO. Did you get in a plane and say I don't feel comfortable flying this plane?

A: The a/c that are RBA got a lot of gremlins on em. I was concerned that because they were so short on RBA some things were not going to get written up. On more than one occasion when I'd hot seat I'd pass on. Ex roll in the AFCS...

Q: Were the MAF counts high?

A: Yes. Took you awhile to go through the books. Lots of open MAFs. I did express that to (b)(6) (b)(3) 10 USC § 130b. The way you are scheduling, the way you are flying. They're not writing up everything. If it's just a nuisance, we'll fly it. There was an attitude of we're flying because we need to fly.

So the pilots were under pressure to go fly?  
if we have an up a/c in order to maintain our proficiency we need to schedule every a/c we've got. I said you have to get healthy.

Q: Couple of other things. On the night of the mishap, on the weekly you were supposed to fly?

A: The weeklies were a bit flexible. I forget when (b)(6) (b)(3) 10 USC § talked to me about doing that. So going into that week I was supposed to get a warm up over 30 days since I flew.

Q: You know (b)(6) (b)(3) didn't fly since MERF D on goggles.

A: I didn't know then, but I know now.

Q: Looking at the schedule, would you have concern on the mishap flight schedule?

A: I would agree with that. They were qualified and experienced, but they were not proficient.

Q: Do you think they had stale tactics?

A: Yes the scenario was stale. They'd been using that one for a while. 367 would complain. It's the same scenario all the time.

Q: Do you think it was confidence. Hey we're doing the same flight. Complacency?

A: There was complacency. You could tell things weren't thought through or updated.

On that schedule the copilots didn't plan or brief. Then the brief was interrupted at 1700.

Q: So they did that before the flight brief and walking?  
would you have signed that schedule?

A: No. My impression of it was (b)(3) 10 USC would take over Monday morning. Get all the check in stuff done. Get his thoughts together. So I thought it would be good to talk to me and (b)(3) 10 USC. So he came on Tuesday and worked check in on Wednesday.

Q: So keep the squadron flying?

A: Right. Then the previous Friday (b) (3) 10 USC told me (b) (3) 10 USC was to be relieved Monday. (b) (3) 10 USC said the squadron wouldn't get shut down after the relief. The discussion was they were going to continue maintenance.

Q: So the guidance wasn't clear?

A: We told them to do the frag. Told them to continue to operate. I asked (b) (3) 10 USC when (b) (3) 10 USC would take over. ASAP.

At 1400 Thursday he signed assumption of command and did in briefs 1700.

When the schedule came out for Thursday. (b) (3) 10 USC had an acting letter. He did an NJP?

Did that surprise you? NJP? (b) (3) 10 USC here. We're going to do this NJP.

When the schedule came out Wed night. It surprised me it was not just briefs. I would assume the in brief would be the whole squadron.

Who made that call? The acting CO the Maj?

Q: Didn't anyone a MAG look at that schedule?

A: After the fact.

This is important. We've got some muddy water here. Who was in charge...?

When I saw the schedule, I would have thought the in brief would have cancelled the flights. I don't recall specifically when we discussed it. I spoke with (b) (3) 10 USC since they're flying there's a whole crew of guys not getting the in brief. Now after the fact when I spoke with (b) (6) (b) (3) 10 USC § 1304 he had talked to (b) (3) 10 USC about the flight schedule. I wasn't aware of (b) (3) 10 USC talking to (b) (3) 10 USC about the flight schedule. It did surprise me the in briefs didn't cancel the flights.

On Tuesday when I was flying those guys. I spoke with (b) (3) 10 USC how ironic we are going to have a decent number of a/c. Even if you've got em don't fly em. Continue to fly one or two birds. Not just the RBA a/c go on the flight schedule. They're not going to be good birds.

Q: Would you a. (b)(6), (b)(3) you knew him. He took it hard when (b)(3) 10 US was relieved. Did it catch you, did it occur to you looking at the flight schedule. Did you notice that when you saw the flight schedule?

A: I don't remember if I noticed Wed or Thursday. On Tuesday when I was over there he was physically dejected. He apologized to me.

Q: Were they on 12 on 12 off up to that?

A: Yes.

Q: Do you think there was cumulative fatigue in the air crew?

A: I would think in the back. The same guys in the back for the long hops. Three days in the back long crew days...

Q: Did you hear of (b)(6) (b) (3) 10 USC § 1304 some heated discussions with ops about being aggressive?

A: No.

Q: What do you think happened that night?

A: With two a/c lost at same time. A mech failure is unlikely. They hot seated. They entered HA. Notional calls, radio changes, there's generally a lap or two before the winter call. With having a mid air. I don't know who would have done what. Lead did something unpredictable. Dash two had excess closure. Heads down in dash two. Low light. Something unpredictable while the dash two was heads down. Dash two flew into lead. Depending on conditions no horizon. Lll.

Q: Did you ever worry about temp spikes with engines?

A: No.

Q: When you were flying did you ever go to the IMDS to monitor temps?

A: I would look at that stuff. I'm sort of a dinosaur. I'd look at the tape gauges and match.

We were outside cockpit guys. Now lots of heads down time.

Do you see more head down time today compared to the past? Now with the radios embedded into the CDNU and if you have IMDS in the other. To get to the radio page you have to hit the f4 button to get to the radio page. Guys flying with kill switch now and flying with personal tablets.



Q: Does anyone use the EDM?

A: No, people are not using that on a regular basis. Lots of guys have kill switches on their tablets.

Q: Is it safe to say that the average flight time of an NSI 2 hrs per month. Copilots low flight time. Is it an alarming state?

A: Yes. With the way people are flying now. Few or far between on flights. Not doing the starts and shut downs. As a young guy the more you fly the better. I think the young aircraft commanders. You can send them out on a ccx.

Q: So the NSI WTI night guys. You got the young guys. You don't have the iron captains....

A: Right. But when they did ccxs they sent the heavy hitters. Other than planning for the young guys. They're always piling lots in.

Q: Did they ever ask for assistance from the MAG for FCF? They had five for test but none of the test came up during the week.

Was there a methodical process? A vision?

No the maintenance dept was trying to work on everything. I never got the question of true prioritization. No focus. I got the impression that ops and maintenance were not aligned. Ops piled on. Maintenance didn't feel like their point wasn't heard.

In the meantime we're going to down planes. That contract doesn't work for us.

Q: Do you think there is a fall back on the west coast mentality?

A: It is. When they made the flight hour goal in FY 16...I purposefully signed the squadron up for 2400 a month not 2500. In June they put in a 3000 hour year for the FY 16 flight hour goal. I struggled in FY 14 to hit 2600 hours. I necked it down FY 15. 2360. Then he raised it to 3000 for FY 16. In the middle of the AFB.

Q: What was his justification?

A: He said we used to do 3000 hours on the west coast. Same assigned a/c. I heard that after the fact.



## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

(b)(6) (b) (3) 10 USC § 130b

Feb-Nov QAO

FAC

March 2012 - Nov 2013

Q: You lived through the 363 mishap. Did you see any trends between the two mishaps and leading up to this mishap?

A: Happenstance not causal, but heavy work load. Risk can go up. People will get tired.

Q: You knew all 12?

A: I did.

Q: You sat on HF boards? Safe to say who had HF issues?

A: I wasn't privy to everything. I know everyone's got their issues. Been a while since I sat on those boards.

Q: (b)(6), (b)(3)

A: He was in a high stress job. We swapped spots in the ASO. With any dept head tour, he was working real hard. I don't think anyone else comes to mind as far as overt HF issues. The only person I remember talking.

Q: Would you say there was fatigue?

A: Yes

Q: Were they working 12 on 12 off?

A: Yes. Pretty much working till the job was done.

Q: Were maintainers exceeding 12 hours?

A: I know the CO and SgtMaj had a conversation about this and dialed it back. They were working weekends. There's no such thing as a 12 hour day when you have a turnover. We then shifted the maintenance turnover to ensure people adhered to the 12 hour day.

ENCLOSURE (12)

Q: Did you feel that ops had an aggressive flight schedule?

A: Ah...hmm...I don't think so. My personal flight hours were pretty minimal. I know ops was planning pretty aggressively. Based on the number of a/c up and the flights planned.

Q: So they planned for a heavy flight schedule knowing they would have a lot of canc's?

A: I wouldn't say heavy. I would say ambitious.

Q: The night before the mishap did you sign the flight schedule in the ASO block?

A: I don't remember.

Q: Did you have a conversation with the Opso/XO/CO about putting too many x's on the flight schedule?

A: I have. Most of my conversations were with (b)(6), (b)(3) Basically risk mitigation stuff that we would talk about.

Q: When you guys hashed out the flight schedule, would you meet in the middle. Or would safety win over ops? Or when you walked away from these meetings did you feel you were listened to?

A: I don't recall having conversations about too many x's.

Q: What kind of night hours do you need to mitigate night x's.

A: You also didn't fly much since you've been the (3) 10 since Nov.

Q: Would you say the aircrew was legally current for the night of the mishap?

A: Reviewing the ORMs yes.

Q: Were they qualified?

A: Per the ORM yes

Q: Were they proficient?

A: I'll have to check the ORMs. (looked at ORM) Proficiency is based on code.

Q: So you're saying (b)(6), (b)(3) was proficient.

A: He was not current...

Q: That's not what I asked, was he proficient?

A: He got a warm up. Hadn't flown goggles since MERF D so he could sign high into low.



Q: His warm up was one day for four hours. Didn't log any NVG time...

A: It's a little hazy, sir. I remember a discussion with ops. Specifically (b)(6) (b) (3) 10 USC § 14. Specifically the copilot being (b)(6), (b)(3) the mitigation was soaking up night hours lately.

Q: That was your mitigation? One guy with five hours in the past 30 days?

A: Yes five hours night time. He was the freshest, prepping for the NSI syllabus. And he had flown the 8<sup>th</sup> as well. Ok.

You know what sir, this is the discussion (b)(6), (b)(3) and I had. The mitigation of having (b)(6), (b)(3) using someone he was instructing as mitigation.

Q: As long as you've flown in the past

A: I didn't think you could put an M there because he had not flown. I thought you should both be M's and that would count toward your three.

(LOOKING AT ORM) Showed the mitigation of the crew pairing in ORM. Discussed placing M's on the ORM.

NSI's mitigating just because they're NSI's. NSI's mitigating b/c they're fresh and flown in the past 30 days.

The conclusion we came to was the flight is a medium risk flight. Technically by the numbers it was a low. Technically it's a medium.

Q: Do you think when this is all said and done, we'll end up changing this ORM worksheet?

A: It is on my desktop. I plan on bringing it to the stanboard.

RISK MITIGATION OF USING COPILOT NSI

Q: What about putting the S in the flight schedule?

A: It had been changed. The CO signed it. We made sure the ORMS were changed and updated. Part of our job is to mitigate. From the flight portion of the schedule to the ground portion of the schedule. Kind of chewing ass. Just bring it back to me.

Q: You've been in the squadron for a while. Was it not uncommon for you to shoot holes in a schedule and send it back, the schedule, it's driven by ops.

A: It is. You work for the CO.

I'm saying who they want to put on the schedule is their business. I had several conversations with (b)(6), (b)(3) about the ORMs. It's going to give the HAC a heads up to fill it out to the extent it needs to be filled out.

That's what pissed me off about the ORMs.

On the flight schedule the night of the mishap. You've got (b)(6) (b)(3) 10 USC § 1 the PM ODO. On the test the next morning. You've got (b)(6), (b)(3) on that schedule. He's your SL. Hasn't flown goggles in 90 days. That's the first thing that screams at me. Then you have cp's doing a tacex...they don't plan they don't brief. Because (b)(6), (b)(3) briefed that flight. Don't you think that's wrong?

I agree, but also....

Don't tell me they planned and briefed in Kauai a month ago. C'mon Bro.

You've interviewed them? I have.

I know (b)(6), (b)(3) was the one who briefed the flight.

(b)(3) 10 USC § 1: I know Roach took the time to clean it up. (b)(6), (b)(3) head wasn't in it based on interviews of copilots. Would you concur?

I wasn't there.

Q: (b)(6) (b)(3) 10 USC § 1 is getting three initial x's. Is that normal to get those in less than two hours?

A: I'd have to look at where all the x's were. They're chained in some way.

Q: Is it uncommon to have a flight brief. Stop, have the crews go to the theater.

A: It is.

Would cause a distraction. Probably a distraction for the guy getting the low light sl check.

You know (b)(6), (b)(3) probably coming out of a brief. He takes things personal. He's a good dude. He's dragging the cross over to the theater to sit there. (b)(6), (b)(3) has to clean up the brief b/c copilots are confused. Then (b)(6), (b)(3) goes out to the plane to do a fifteen minute penalty turn before a tacex.

Q: Have you done turning back ups?

A: We have.

I don't think we had the aircraft.

Q: Let me ask you another question. Did you feel weird that the CO was relieved and you're still banging out a flight schedule?

A: I remember the first day of a CO's command is usually a no fly day. But we had stuff to do.

Q: But you're the ASO, the CO got relieved? Did that not cross your mind? I'm asking your personal thoughts. What was the pulse? What was the culture? People aren't getting enough touches, an ODO scheduled the following day, I got a bunch of s's on there. I do know the acting XO is acting just got an acting letter is doing NJP's and just told to drive on. Anyone on the outside would say, this is a perfect case study at ASO school. So I'm asking you what you thought the CO got relieved on Monday.

A: I was surprise. We had just had the culture survey. The CO thought the debriefs went well. I thought our expectations of what we would see were vindicated. We were on the upswing. I remember the communication problem between senior enlisted and junior officers was kind of a footnote. It was mentioned as a comment but not a trend.

I haven't seen it. But I talked to (b) (3) 10 USC.

I think that was in hind sight. That was mentioned several times when the CO was relieved. It's being represented and cited by the CG as one of the reasons. Back in the delta days we could bum crews, tools, equipment. Frags, faps, FACS are killing us. I had one year when I came back. Had to extend to get my quals back and go on MERF D. Then (b) (3) 10 USC is talking to us about the CO being relieved.

Q: What did you think about the CO?

A: He's smart. Did my HAC check. 50 pound brain. Smart personable. I was the QAO when we got the 53.4 on the maintenance inspection. He was there working the same hours I did.

Q: You were the QAO?

A: I was there. The CO worked all the hours I did.

Q: How about the AMO?

A: He worked long hours also.

Q: So you're in QA. Did he ever attend maintenance meetings?

A: No. He did fod walk.

Q: Was he one of those CO's who would sit down in flight line?

A: I remember him coming in to QA and having discussions regarding certain problems.

Q: Did he ever present a clear vision? How you were going to get up to a certain number of a/c?

A: Yes I remember a school circle. He basically said this is our goal. Sometime after the inspection. Between Nov-Dec.

Q: But you hadn't flown in 21 days...

A: Right. We kicked CNAF.

You guys went to PTA right before the Change of Command.

I checked into the squadron in Feb. Began shadowing (b) (6) (3) 10 USC §. A month to two months we got hit by the inspection. I put together drafts on the get well plan. Yes the CO was heavily involved in that. Immediately following the inspection.

Q: You're talking the get well plan for the programs? All 39.

A: Yes. To get us to the point where the squadron wasn't shut down.

You came out of it. What was the plan for the planes? The RBA, because I can show you AMSRR. At some point RBA becomes more important than anything else. On or about Thanksgiving you do 12 on 12 off. In your mind who came up with the idea to come in over Thanksgiving.

I don't remember. We were called to come in during Thanksgiving.

Let's talk about (b) (6) (b) (3) 10 USC § 130b That was a tough time. Tight knit family. You hadn't yet lost all your SNCOs yet. Flew at PTA, good inspections, but no AAMO.

Right. (b) (6) (b) (3) 10 USC § 130b had moved from flight line to ops. He loved maintenance. (b) (3) 10 USC said yeah, I'll make you my double A.

(b) (3) 10 USC came back downstairs to fill in the double a spot.

Q: While you were in QA did you ever know about the downing of aircraft and contest?

A: Maybe not a contest. I remember talking to my guys about it. Is it a motivation problem. Are guys doing five days of work in seven days?

Did you ever send your SNCO out there and ask what's going on?  
Downing a preflight for 50 hour items?

I remember talking with (b)(6) (b) (3) 10 USC § 130b. I remember coming in Monday why we didn't make any money...

Q: You had one week where you had five on the test schedule, and at the end of the week none were up?

A: I remember. I asked (b)(6) (b) (3) 10 USC § 130b I asked if people were sand bagging. Downing a/c because they're mad. He confirmed to the negative. I wanted to know why we weren't making any traction. And I believe him.

Q: Do you think you have...if I was to piss test the squadron during this time I could find someone?

A: I remember running my first enlisted safety council. I ran it and asked what they wanted to be trained on. I asked what the next mishap would be.

Someone driving home tired. A lot of them came back and said a DUI. I addressed this with the CO.

That's what happens when you work all the time.

I was concerned and remember hearing that in an enlisted safety council.

Q: Sometimes when you work hard you miss stuff. Do you think the Class C on the engine was someone tired? Or do you think it's not following the rules.

A: It's my opinion. It's a dude with his pack straps half way off. On his way out. He was a CDQAR. (b)(6) (b) (3) 10 USC § 130b.

Let's talk about the hung gear. (b)(6) (b) (3) 10 USC § 130b.

You were the ASO at the time.

Q: Was the airfield closed?

A: It was.

They launched from the big island with pax on board.

I thought it was going to be a big deal. I did a hazrep on it. There were learning points. It pisses me off that we don't have the facilities for that.

Q: Back to this gear emergency. You had an SDO. It was closed field when you left PTA, closed field here. Those maintainers are they pax or aircrew at the time?



A: I'm going to have to look at the AFM at this time. I believe pax. Was told by ops they were pax. What I was concentrating on, was the procedures you have to reference in a specific pub.

Q: Did the crew follow the procedures?

A: They did a fantastic job with the EP.

Q: Did the CO get in their cockpit?

A: Yes. He advised them to not blow the gear down until the last minute.

I know he advised him. Step three is to blow the gear.

The thought process was that he had lost utility when blowing down. They had the fuel to hold that off till the end.

Q: When did they do the yanking and banking?

A: I think the hazrep never got published. The MAG CO killed it.

(b) (3) 10 USC was instructed to write an approach article. We pointed the finger at base CFR and MCAS. I wasn't privy as to why the hazrep got cancelled.

Q: Have you ever flown and looked back and seen crew chiefs on cell phones?

A: I have not. If I did, I'd blow up.

Transitioning. Unless you have anything glaring about post mishap. Was there anything that stuck out after the mishap. We've listened get the PCR out earlier, as far as the rescue. There's nothing more that could have been done? Is there anything we could put in for the families. I'm talking the search and rescue phase.

The squadron did very well. The two copilots, the ODO.

Everyone we've interviewed has said phenomenal. I owe the coast guard a case.

I'd had liked to have seen an initial reaction to who had that laser pointer.

You're saying in the vicinity of Dillingham?

Q: That's a big deal flagging an a/c. It gets reported, but there's no report.

A: I'll get that for you, sir.

If there is documentation, that someone was lasing that night, we'd like to have it.

Back to the cultural workshop. One thing mentioned was communication.

The communication you are referring to was between SNCO's and junior officers. There are some definite personalities in those areas. I don't recall any of my SNCOs.

Q: One of the other things that came up was lack of leadership in maintenance control? Would you agree?

A: I would. Now leadership has changed. I believe there was a sigh of relief in the squadron when (b) (3) 10 USC left and (b) (3) 10 USC, (b)(6), (b)(3) took over as MMCO. When that regime changed we started moving up the slope. That was the current evaluation of the squadron.

Q: So what you're implying is personality.

A: There was work ethic, angst, personality...

Q: Then you had AFB 346. Major/Minor. The decision was to do major and minor during phase.

A: Yes. We had a traffic jam in phase. I spoke with (b) (3) 10 USC, (b)(6), (b)(3)

Q: You fixed the immediate. Canned a bunch of shit to get the MERF D plans out. Then you concentrated on major and minor. Is that one example of not the smartest time to do the AFB?

A: I wasn't privy to that decision. That was my third day back from my FAC tour.

Q: Prior to the November ALMAT. Did you guys brief the CO the status of where the programs were?

A: We had bi-weekly briefs by each program manager. They would brief that slide in front of top, AAMO, AMO.

Q: Prior to the inspection. Not the re-inspection?

A: I remember (b) (3) 10 USC talking to the...I know it occurred. I don't remember (b) (3) 10 USC talking to the CO.

Q: Thanksgiving 12 on 12 off. Was there any time before that?

A: It was written on the flight schedule. Work till the job was done. A lot of that was because of the programs. I'd talk with (b)(6) (b) (3) 10 USC § 130b. We're not going to be prepared for the re-inspect. We had an unofficial MALS inspection.

Q: When you failed the ALMAT the first time. Did you think someone was going to get fired?

A: I thought the AMO. Didn't think the CO. (b) (3) 10 USC asked to extend as the MO. He didn't want to end it on a bad note.

Q: (b) (6) (b) (3) 10 USC § 130b. Who's he?

A: He's a program manager. TDs? Worked in control. Had big personality issues with (b) (3) 10 USC. To the point he came into QA. I allowed him to work in QA because he didn't want to work in the same office as (b) (3) 10.

Q: He ended up taking (b) (3) 10 USC § spot in phase?

A: I know (b) (3) 10 USC § pretty much got canned.

You have an inspection. Nobody got fired. There's no paperwork. You fail the inspection, go a few more months. The next person to get fired was the CO.

I was under the impression that (b) (3) 10 got bad paperwork.

Q: (b) (3) 10, what do you think happened that night?

A: I don't know. I'm bound and determined to find out. I don't know if it was maintenance, pilot error, laser pointer.

Q: Do you think today's generation spends more time with their heads down?

A: I think the CDNU, IMDS, kill switch, navigation. Obviously they are all SA building. VFR day on an island I've flown around. They are excellent tools. But they could be a distraction. I don't want to point fingers at (b) (6), (b) (3) or (b) (6), (b) (3) The WTIs love kill switch. It's a great planning tool.

You asked me about proficiency earlier.

Absolutely. We have copilots who said they can't land an aircraft at night in Puukapu...

Obviously, they aren't getting enough flight hours. I had the blessing of a healthy squadron. Excellent instructors. I think the excellent instructors are there. The flight hours are not.

As far as the street definition of proficiency. But no. Street wise I think we were all struggling for proficiency. 365 days of not flying nights and strapping on your NSI patch is not wise. I think it's legal. I don't like that. Which is why we talk to ops. Specifically about (b) (6), (b) (3) I talked to (b) (6), (b) (3) specifically about that. The black and white per the T&R it's allowed. He said a guy fresh from the night before would be

better suited to teach a new copilot. We agreed that there was a better situation. We then agreed and talked about what an M means to a HAC. The ORM doesn't save a life. Just gives him a heads up. No it didn't mean a lot as far as an M vs an L. and (b)(6), (b)(3) agreed. We kind of got heated. I just don't know what you're asking. I want to do these guys right as a safety officer. What are you asking sir?

I know there was a conversation between you two. I know it's tough.

Here's what I think. From a stupid piece of paper here. I know they knew what they were getting into. We talked about it. Specifically (b)(6), (b)(3) We talked about pressure to get an x out. We talked about it being ok to not get an x out. We talked about the relief and how it hit everybody. Something like that happens and we are all reeling. We didn't even expect the new CO to show up until a week after he did. I remember the in brief coming out of nowhere. I should have piped up and asked, why are the flight crews here? I think that would have been acceptable. No one would have batted an eye about being in the flight box.

Q: That week after the CO gets relieved. You guys are just continuing on...you got (3) 10 running the squadron?

A: Right. We thought he would be interim for a week. The direction would remain the same. His direction from the last all hands. Six aircraft or the best of the MAW. That was our goal. I believe this was in BITS.

Q: When the CO got relieved. Did (3) 10 pull you together?

A: He did. Told us about the new CO.

Q: Back in the day when we did mission briefs we would have the aircrew in the ready room. Would you expect to see 8 in the ready room when you briefed this mission.

A: Yes. I'd expect unless they are prepping the aircraft.

Q: Habitually, in the old days you remember? In the last six or so months did you have aircrew?

A: At least one, or we would hold the brief.

Q: The standard Puukapu, ha wendy, cp Carlsbad. Is that still the same?

A: Yes. That's the standard one.

Q: Did it seem like the scenario was stale? Would you say you are a night oriented squadron?

A: No.

Q: When you guys did fly not on frags you flew nights?

A: Yes. I remember when (b) (3) 10 US was getting ready for WTI we were flying nights. I'd say that's a solid trend.

Q: Would you say you have some senior qualified guys and a pool of 18 copilots who get only a couple of hours per month?

A: Yes. Much of the focus over the last couple of months has been NSI, WTI driven. The pressure is on and it's obvious pressure. We have a seat at WTI and we miss it. You cancel an entire generation of WTI students.

Q: But you cancelled MAWTS assist in Dec?

A: Right.



## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

WTI. 3 years in the squadron. Flight Line.

(b)(6) (b) (3) 10 USC § 130b

Q: Where were you the night of the mishap?

A: I was in Baton Rouge.

Q: How did you find out?

A: We were boarding our first flight from TX to HI. It was a call from my cousin. His wife texted me and gave me a call asking if I was alright. Very quickly after that family other members of the Marine Corps texts were coming in. I started reviewing the news.

Q: Did you reach back?

A: I did. Most cell phones were off. Got on the plane. Landed and got ahold of (b)(6) (b) (3) 10 USC § 13. Said he couldn't tell me much.

Q: You live on base?

A: I do. We locked ourselves indoors.

Q: Did you know the names by then?

A: I did.

Checked back into work the next day.

Q: Have you done MERF D?

A: Yes. Last one.

You were there with (3) 10 U. Built two planes afterward. 500 hours.

Good flying.

One plane to mod. One to sidlm. From Australia two of the WTI candidates for personal reasons they got cnxed. I got the call to go to WTI. Two months before the end of MERF D I got the word that I'd be going to WTI. About a week here then WTI.

Q: When did you graduate?

A: Oct 20<sup>th</sup>.

Q: When you were at MERF D. Morale's high. What were your buddies telling you back in the squadron?

A: From what I recall morale was low. 12 on 12 off.

ENCLOSURE (12)

Q: While you're at MERF D your guys are telling you you're working 12 on 12 off?

A: Yes

Q: Were they working weekends?

A: I didn't reach back to the squadron a lot. I remember some of the Sgts.

Q: So you do a successful deployment. Come back early. Hit WTI. By this time you hear about a failed maintenance inspection. The re-inspect is coming up. What's the climate like?

A: Stress.

Q: How's your buddies in the line doing?

A: I was teaching how to take care of the logs.

Q: At any point, were you looking at fatigue? You're a WTI, same guys giving quals? But you're not flying that much because up until the re-inspect the focus is programs?

A: For me after WTI the focus was Lava Viper.

Q: How'd that go?

A: Bad.

Q: How bad is bad? You've got a syllabus for the next generation of crew chiefs. How many birds?

A: Two. For the last one we had four. No overnights. Guns fell through. We were getting guys ready for TERFI and that fell through. The wx closed in on the night we were trying to get guns.

Q: What did you do for Christmas?

A: I was visiting NC.

Q: What about Thanksgiving? Do you remember coming in to work?

A: Yeah we did. (inflection changed as he remembered)

Q: Tell me about it. Who told you to come in?

A: I remember a school circle with (b)(6) (b)(3) 10 USC § 1304. The basic gist of it was getting a/c up.

Q: When he got relieved were you shocked?

A: No. Not for my part.

Q: Why would you say that?

A: His leadership style I'd say.

Q: Were you part of the hung gear episode?

A: No.

Q: What was he like in the cockpit?

A: I didn't get to fly with him that often. I don't remember him doing anything overtly dangerous.

Q: Were there pilots you were skeptical about? Was there anyone you felt dangerous flying with?

A: (b)(6), (b)(3) was extremely competent. He was an extremely good pilot an extremely good officer. (b)(3) 10 USC and he worked well together. He was tactically sound. Savvy.

Q: When you were at MERF D, did the aircrew sit in on the briefs?

A: Yes. Unless getting the birds ready. Back here always at least one guy in the brief.

Q: In the tactical scenario you fly. Is it the same scheme of maneuver? Did you ever question the tactics guys? Why don't you come up with something else?

A: I think as a younger crew chief it becomes routine and monotonous. You can get lulled into a false sense of complacency. You can get complacent.

Q: After those night flights do you get to bed early?

A: There are long days. I think everyone adapts to that. You can't go home until the D&T is done. Night crew is shorthanded. Help out where you can. Look out for the young guys and help manage crew day. But yes there are some very long days especially when you are flying three or four days a week.

Q: I'm seeing low flight time NSI's. Have you seen safety of flight issues because the copilot wasn't proficient? Or wave offs? Did you ever feel that guys weren't getting enough touches daytime? Night focused NSIs WTIs?

A: MERF D, WTI, Lava Viper, Cpls Course. I remember wanting to take leave.

Q: I know but when you are in the squadron you see your fellow Marines eyes?

A: Yes sir. It's extremely busy.

Q: Was there challenges communication breakdown MC QA?

A: Yes sir.

Q: Working 12 on 12 off. Anyone just go out there and down planes?

A: I remember someone had gotten in a disagreement with a plane Capt. He found 30 gripes and said fuck it and downed the bird. Between him and control.

Q: You had a CO relieved. Crashed a plane two days later. Should you have been flying?

A: We should not have had a flight schedule. Absolutely not.

Q: On the night of the mishap, you had a copilot getting 3 x's. Are there too many x's on the schedule?

A: On the crew chief side of the house if you can't get the training don't get the training.

Something like gun codes, externals. Get everyone in there. Not the best way. On a certain number of ways. You try to maximize the training opportunities.

Q: You got two planes up. Try to get as many people on the schedule?

A: It's getting better.

Q: Talk to me about HF for the aircrew. You know who was rock solid, (b)(6)

(b)(6)

A: Good Marine Good CC. He wanted to be a teacher. A bit more soft spoken. Extremely intelligent. Well spoken. Seeing the job in ops now, I would assume he was under stress.

Q: (b)(6), (b)(3) You smile...he's the comedian?

A: He had two speeds- slow and stop. He was a good crew chief.

Q: (b)(6), (b)(3)

A: Going through some stressful issues professionally. CDI. Had a pretty rough go of it the first few years in the squadron. Got left behind as far as quals. He was beginning to pick it back up. He was right at that stage of getting out or staying in. He was pissed. Combining that with the low morale. He was ready to get out. He was done.

Q: (b)(6), (b)(3)

A: Goofy kid with lots of potential. Late bloomer. In danger of getting FAPed first year in the squadron. Didn't show a lot of drive when he first checked in. On the cusp of what we wanted. Good kid. Good Marine. Good crew chief. As far as HF is wasn't privy.

Q: (b)(6), (b)(3)

A: One of the more senior crew chiefs. (b)(6)

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

Q: Didn't his (b)(6) offer a job? I think so. Do you think he had fatigue?

A: I would think so.

There were no issues with the others on the flight.

Q: How do you think it happened?

A: Complacency. They got complacent. They were tired...

## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

Been the OpsO of MAG. Came from PACOM. The last two years have flown with the squadron three times.

Flew to PTA once, round trip to PTA, 1 FCF. Now expired on everything. Leaving Nov/Dec.

Q: 463 over the last year..what were your thoughts over that squadron?Would you say the squadron was on a decline?

A: That's little misleading.I wouldn't say decline.The peak of the wave was never where I wanted it to be. I was never comfortable saying they will support the FRAG.

Q: Would you say there's a disproportionate number of FRAGS?

A: 10-15% of monthly hours. Was 30% but throttled back.

Q: So you worked with the?

A: I only asked them to fly 12 Jan 2014,because the Army bailed them out before. That was to the ship. I need to know if you're flying tomorrow.

Q: What were they doing?

A: It was the Army LSV frag.

Q: Was there a rehearsal?

A: They did fast roping but not to the ship. Part of the ORM. One of the rehearsals was cancelled.

Q: But you didn't task them to go to PTA?

A: No.

Q: So they did the LSV mission.

A: Yes. Successful.

Q: Where did they rehearse?

A: To a field. One a/c for the mission.

Q: You have monthly frag conferences?

A: Yes.

Q: Was it hard to plan with low RBA from 463?

A: Absolutely. When (b)(3)10 USC got here I had him completely rewrite the Frag order. Acceptance timeline, AAR, we were making last minute calls up to the CAB to support 3d Marines. I go up to visit the CAB once a month.

Q: In the last year the Army has been supporting 3d Marines?

A: Yes, Pissed me off.

Q: Why were frags cancelled?



A: Maintenance. There were several months where I don't think they had more than 2 up a/c. I call them the dark months. August to October MERF D WTI overlap. Your A-Team is out and we have to support. On paper their manning is good. The three year PCS limitation is if you owe 5 years you can't PCS guys out here. There's no depth to bring second tour young guys out here.

Q: Did 463 want to bump up the annual FY hours? Did he increase the flight hour goals while he was in command?

A: I'd have to look that up. FY is 3000

Q: What percentage of frags did they cover?

A: Damn near 100% systemically, their readiness was never anything I Could find confident that they would support frags assigned.

Q: You found out about the relief when?

A: Noonish Monday. Went to the calendar synch and (b)(3)(10)U was sitting in there. I saw the CGs car. I wasn't involved with his planning. Talked to (b)(3)(10)US a little bit. He said he was briefing the CO on a 53 conference. I went back and reprinted my stuff. I was in meetings all mornings at 1300 I ran into (b)(3)(10)US. When I found out; I checked what the ramifications are for this week. The a/c were safe on deck from the ccx around 1400. I talked with (b)(6), (b)(3) he was kind of cagy. He already knew. I didn't say a thing. I asked how they were looking for readiness for the week. He said as long as the ccx a/c were good, they'd have 4 or 5 RBA this week. (b)(6)(3)(10)USC§ came over and talked...I asked (b)(6)(3)(10)USC§ what the direction was that was given. He said keep flying. I said if you can't cover the frag, go back and talk to (b)(3)(10)US. The Army will understand.

Q: In your mind, (b)(3)(10)U was the acting CO?

A: Yes. He was the acting. But if you're going to tell me you'll fly. You need to support the frag. So they go out to do the frag. (b)(3)(10)US was the mitigation. He was current on VBSS.

Q: Any other guidance for the rest of the week?

A: I told them I got it you're being told to fly (b)(6)(3)(10)USC§).

Q: But you talked to (b)(3)(10)US? Who gave that order for them to fly?

A: I was told (b)(3)(10)US and CG were in the room when that direction was given to (b)(3)(10)U. I said ok because it's readiness. I thought they'd stand down. I told them that I understood that they wanted to do things. Told them to think hard about what and who you put on the schedule. I told (b)(6)(3)(10)USC§ to think long and hard about proficiency. Then the conversation shifted because (b)(6)(3)(10)USC§ was wondering about whether he still had a job. I talked to him about being a staff officer. You need to protect your boss from themselves. Like the hung gear. They came back early. I told him that if that ended badly they would be looking for a new job as well as their CO. Flagrant violation of the rules and you didn't tell your boss, your job is to keep your boss informed. They came back closed field. It was a LCpl in Ops that told them it was ok. Now they are able to do closed field ops with maintainers on board. After the fact. At the time they had maintainers. At the time that was not the case.

Q: Who authorized the return closed field?

A: It was an authorized return. around 1000 in the morning.

I called the ODO. Told the squadron to take care of it. They literally called a LCpl and got permission to launch. It could have very easily been handled if they would have gotten ahold of me. I could have called (b)(3)(10)U. I had a pointed discussion with the officers about their duties. Told (b)(3)(10)U afterward. In hindsight I probably should have told him first. I could have easily figured out who the pilots were. But I told (b)(3)(10)U that this is

a squadron issue, but I will give the CO the full details. What you do with the squadron and crew is your business. I don't know how to read (3)10U. November 15.

Q: Is this squadron bad about getting paperwork navflirs to the sims? Do you have similar challenges?

A: We do audits FAI checklist about every two months. I have a weekly opso meeting. I try to go to their spaces once a month.

Q: What's your take?

A: When I first got here Pegasus was all over the paperwork.

Q: When did it change?

A: January or February, the communication just stopped. Had a heart to heart laid out expectations. My senior enlisted (b)(6)(b)(3)10 USC § 11 was hitting his stride. At the same time we had our campaign plan. We started doing inspections on squadron. Second quarter of 15. It was good for a couple of months, then it would go bad. MERF D out the door then things would fall off. I was out most of the summer. When I came back it was like WTF you guys haven't been doing anything lined up.

Q: What were they not doing?

A: Simple shit. 90 days out is when I get Frags. Basically the squadrons have to say they can cover so I can find alternate sourcing. Getting responses on whether they can cover...I know it came down to having a/c. I said instead of saying 20%, we will try to steer training and frags. At the same time.

Q: Lack of vision at times?

A: I will tell you that at least once a month I have to call MAW that their TEEP is screwed up. I was changing theirs several times a quarter to the point MAW asked what are you doing? (b)(6)(b)(3)10 USC § 13 was helpful. Their campaign plan didn't match the teep they brought over.

Q: FACs? How many does MAG 24 provide per year?

A: I think we give four or five.

Q: 463 gives 2 per year. Is that proportionally accurate?

A: Yes. VMU will provide more.

Q: DRRS. You see the DRRS. Has wing ever questioned you about 463 DRRS?

A: Yes, But I do know the biggest problem from the MAWs perspective was the same problem that got (3)10U relieved, Readiness. The pilots weren't flying. Your high guy had 19 hours. They kept giving the median. The problem is the guys weren't getting the flight time. Crew chief broke the PCR on a test. CDI was not supervising. I spoke with (b)(6)(b)(3)10 USC § 13 The general climate over there is the Captains haven't left flight school. Never seen more than two at fod walk. Never saw (3)10U.

Q: Was he disengaged with maintenance department?

A: I don't think he had the personal skills as a maintenance officer. I told (b)(6)(b)(3)10 USC § 13 that. I told (b)(6)(b)(3)10 USC § 13 before he went over there, if you go to maintenance you're going to have challenges because that place is fucking broken.

Q: What was the morale like over there?

A: Shit, The lack of motivation from the captains because the field grade not showing them what to do. So NAE.

Q: The conversation is about 53 readiness?

A: Yes.

Q: Why is this one squadron in New River so much better. Is it fair to say Wing, MALS, MAG, and PMA 261 all pitched in to help them?

A: Yes. My biggest worry was they were not getting enough stick time.

Q: Who shut them down after the ALMAT?

A: The MAG CO. I think he was trying to get (b)(3) 10 USC § 1306 to shut down. They continued to limp along after the CNAF. In the theater the MAG CO said this is why you are shut down. Monday or Tuesday following 4 September, He said you can test. He went over the priorities.

Q: You were seeing sloppiness?

A: Class C, hung gear...Yes

Q: Did you know the wing ALD was reaching directly to the squadron asking for updates on a/c?

A: No, but I fed them the readiness weekly.

Q: Nobody would call from Wing?

A: Not G3 but ALD would do it. I told Wing G3 to tell ALD to knock it off. They did that to VMU and I got mad. (b)(6) (b)(3) 10 USC § 1306 the G3 I told him (b)(3) 10 USC § 1306 not to reach directly into the squadrons in the second week of August. I had that discussion with the G3. (b)(6) (b)(3) 10 USC § 1306 was calling down to the Maintenance Chief.

On the 12<sup>th</sup> I Spoke with (b)(6) (b)(3) He was worried about his job. Told him to go to the new CO with a plan. If you have a plan, (b)(3) 10 USC § 1306 is good guy. You will be fine. He had a four month plan.

Q: Do you remember what his plan was?

A: When he was the DSS he saw one or two people in maintenance hindering maintenance. He had (b)(3) 10 USC § 1306 removed. (b)(6) (b)(3) 10 USC § 1306 and he had a bad relationship. Step one was to eliminate the bad apples. He was going to immediately start an officer meeting every day. Minimum weekly he would meet with the QA shop. He was going to meet with the SNCOs. He thought the biggest problem in the maintenance department was the small unit leadership. He also said he and (b)(3) 10 USC § 1306 sat down and did an ops maintenance contract.

Q: How does a squadron continue to fly if they're below 50%?

A: I would talk to the PTO. Why are you writing a 2x2x2x2/??? You're going to break your aircraft. (b)(6) (b)(3) was tired....he was exhausted. I asked him if he was going to be prepping for RIMPAC or the MEU. Working on getting his quals back. He asked if it was his fault why the CO got relieved. I told him you know who I think should be fired.

Q: Looking at the flight schedule...chasing x's?

Absolutely.

Q: Did you discuss with (b)(3) 10 USC § 1306

A: I told him to scrutinize the schedule more. Just be cognizant of it. Putting ten pounds of shit in a five pound bag. If you're always pushing, you're going to break the squadron. I think there was disengagement on the maintenance side. Ops continued to push. So, the Marines on the ground worked to make mission. That further beat morale. It needed a break. A maintenance focus. There were things that could have been done. Shifting

focus. I think (b)(6)(b)(3) 10 USC § was getting hammered. They weren't getting hours and quals. It's all about the DRRS rating because it's all about training. I started pushing ground training. They weren't pushing ground training.

-- Follow-Up Interview --

From 19 December 2015 until 4 January 2016, the U.S. Secret Service imposed a Temporary Flight Restriction upon all of our aircraft at Marine Corps Base Kaneohe Bay, Hawaii. I tried to explain to the Secret Service that functional flight checks (quick maintenance flights), were necessary for all routine maintenance. They refused to allow any flights. This had a very real impact on HMH-463's ability to improve RBA numbers. Before the TFR went into effect, HMH-463 sent two aircraft to Kauai so they could at least conduct some training while the TFR was in effect.

The first stage of the rescue efforts were chaotic, as can be expected. I did not have any love for the MCB Hawaii Emergency Operation Center/Command (EOC) until the early morning hours of 15 January 2016. The EOC allowed me to better focus on the rescue mission. The EOC pushed out updates to certain individuals while my phone was constantly getting called and I simply did not have time to answer all the requests for information. The EOC was really helpful. For example, (b)(6)(b)(3) 10 USC § 130b at the EOC coordinated port-a-johns for the beach combing efforts. That allowed me and my team to focus on other things. I was in constant contact with the EOC through (b)(6)(b)(3) 10 USC § 130b on 15 January 2016. At 0200-0300, I texted him and told him that I was just assigned to the AMB for this mishap.

The time stamps recorded on both the radar telemetry data as well as the surveillance video footage were derived from "internet time" which is extremely precise, accurate to many fractions of a second.

There was no classified gear or equipment on either PS 31 or PS 32 on 14 January 2016. No classified information was loaded into any of the equipment aboard PS 31 or PS 32.

The cockpit of PS 32 was discovered but the cockpit of PS 31 was basically destroyed into pieces.

## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

Oct 2013 in the squadron.  
6019 MOS, prior to that 6113 engine mechanic.

Q: Talk about AFB 345 and 346.

A: Fuel lines for the a/c. No one was happy with the amount of hours to document that fleet wide. They came out to do training on that. Concentrated on MERF D a/c first.

Q: Describe the levels of maintenance required for 346.

A: Looking at the fuel line and wire harness rubbing. Critical and non-critical. Noncritical were the ones that were not safety of flight.

The plan was to fix these. That went well? We used phase crew and a tiger team going around hitting that.

Did the phases get backed up because of the fix? For a number of reasons they got backed up. We had the back up before 346 came out then.

Q: Who was in charge of the maintenance plan last summer?

A: (b)(6) (b) (3) 10 USC § 130b They work on proprieties.

Q: How was the relationship between them and ops?

A: The communication could be better between MC and Ops. We would get unexpected frags, boats rolling though, HAAR.

Ops owe you a head up.

Q: The relationship between LF and MC. How was that?

A: I mean, just the normal every day bitching and crying. Nothing out of the ordinary.

ENCLOSURE (124)



Q: So you guys had the cultural workshop this pas Dec. Did you see that?

A: I don't recall.

Q: Did you have a good relationship with Sgtmaj?

A: Yes.

Q: What happened with the Class C mishap?

A: That was b(6) (b) (3) 10 USC § 11. He had a month and a half left at the time. He was a CDQ. Always very knowledgably Picked up CDI, very good. I think on that one. Maybe a combination of night, only a month and half left. He didn't do what he was supposed to. And we lost and engine.

Q: Could you walk through the challenges of removing and engine?

A: We didn't have any challenges.

Q: Oh that's right; they didn't have the J hook.

A: That's right sir.

Q: So this is a month prior to the inspection?

A: Yes Sir.

Q: Did the engine go to MALS?

A: With that one, they tried removing it.

Are we building QEC's again? If you order an engine from MALS and its's not good, MALS builds? Yes.

Q: Up until the mishap, what would you say the pulse was? Tired.

A: Yes Sir. Working a lot of hours.

Q: Were you working 12 on 12 off prior to the maintenance inspection?

A: From Aug on we were working not every weekend but probably a few.

Q: what's the biggest problem with low RBA?

A: I think the marines were being over cautious. Checking more than required.

Q: On a D&T doing 50 hour item?

A: I think they thought we were a zero defect squadron.

Q: What happened to the marines who burnt up the engine?

A: He lost his stamp.

Q: You had a QA dept holding people accountable.

A: Yes.

Checking a VGA and shimming a VGA.. Looking at those on D&T

Were there marines going out having a contest downing planes. I heard it from the SgtMaj and QA. I heard that it was two plane captains.

Q: Was this brought up in a maintenance meeting?

A: It was brought up in a general forum. I brought it up on a weekly SNCO meeting.

It wasn't maintainers pissed that they were working another weekend? I heard second hand.

Q: Did the CO address this?

A: Yes.

He said I'm not telling you to say something's good that's not good. There's a process that we go through. But if we're microing everything you will find downer. Around the new year..

Q: Was the CO at maintenance meeting?

A: I'd see him.

Q: Did the Co do GOD walk?

A: Yes

Q: Did officer do FOD walk?

A: There were pilots out there normally a pretty good showing of pilots.

Q: I talked to some of the Marines in maintenance, they were tired?

A: Yes sir.

Q: Prior to that guidance, were Marines working past 12 hours?

A: Yes sir. I'd have to kick them out.

Q: What happened on the maintenance inspection?

A: The SNCO's failed. They didn't get involved. I was going off of what they were telling me. For the CNAF I was going through the programs. For the wing inspection we took their word for it. They just didn't do what they were supposed to do.

(b)(6) (b) (3) 10 USC § 1301?

Our TD Coordinator.

Q: Did he get fired or just transfer to phase?

A: I know (b) (6) (3) 10 USC § was moving.

Q: Did he get bad paper?

A: (b) (6), (b) (2) from the commander on the TD program. I think the inspectors didn't appreciate his candor.

Q: How did (b)(6) (b) (3) 10 USC § 130b get along?

A: It was obvious. I don't know that anyone else knew. (b) (6) (3) 10 USC § 130b didn't do anything wrong. When something was wrong, he would jump in and do what it takes. There were issues with the marines and the calls he was making on cannies.

Q: Was there pressure to produce a/c for a flight schedule?

A: Yes sir.

We've been an operations driven squadron. When the MAG CO directed the Ops maintenance contract. In November, things started turning.

When (b)(3) 10 USC left and (b)(6), (b)(3) came in, with his vision was there going to be turn. We've been on the verge of above 50% RBA.

Q: Do you feel MALS, Wing, PMA, and MAG were there to support?

A: Yes sir.

Q: Was the MMCO quick to cannie to make a schedule?

A: Yes sir.

You sit on PFCs? What was the next mishap? Did you every have any thoughts?

I felt that it was going to be a liberty incident. Marines were going to try to unload a 12 hour day. We had the setback with (b)(6), (b)(3) 10 USC § 1 and burning up an engine. I wasn't concerned about not doing procedures correctly. They were more strict on themselves and downing an a/c when they didn't have to. I saw domestic disputes, some liberty incident.

Q: Was MMEA supportive of your personnel issues?

A: The challenge I have is that they're not filling for quals they're filling for numbers. We're getting the post B billet Sgt. We're not getting qualified marines.

Q: Is the mandatory resident PME hurting?

A: All command sponsored PME is not good. That's great when you return from deployment, but it's a balancing act. On any given day I'm at 53% of my numbers.

Q: During the last 6 months. Were you guys adrift with no clear guidance.

A: I didn't feel adrift. We had a goal 505 RBA.

Q: Why couldn't you get there?

A: If you had an up bird, you'd be flying it.

Q: Maintenance training? Are they salty gunnys out there?

A: A few are. There are some SNCOs I have to kick out of their office.

Q: During the low times, were SNCOs out there with the Marines? Were they detached?

A: No. They were trying to do ASM and other stuff during the work day. LACK OF SUPERVISION OF YOUNG MARINES.

Q: What's the relationship with the officers. The ones not in maintenance? Do you have turning backups?

A: Not always.

Q: (b) (3) 10 US, he had a tough time. Was there consideration at that time for him to spend time with his wife at Tripler?

A: I don't know that he had those discussions with the CO. He poured himself into work to deal with it. I don't recall any conversation.

Q: Was he engaged?

A: Yes. Definitely engaged.

Q: Why wasn't he moved?

A: I'm not sure of who could have filled that position.

Q: Tell me something I don't already know about the squadron? When the squadron does fly, its late afternoon into evening. How do you test at first light?

A: Not too often a/c aren't ready.

Q: Why aren't they ready?

A: They would find grips on night returns.

Priorities: flying a/c and then FCF.

AQUIS? Why would you need five a/c for AQUIS? Nose strut on the first MERF D. damaged the nose.



Why did you have a backup for the second MERF D? 5 to make 4 We were babying a fifth aircraft for AQUIS. (Based on previous nose strut issues)

Q: Do you think you have a drug problem here?

A: I do now.

Q: Were the wing inspectors going too deep?

A: No sir. They were doing exactly what they were supposed to.

Q: Did wing ALD reach down for status reports?

A: I think the CWO was calling to ask statuses.

Q: Did it happen more than once?

A: I believe so.

Q: Did (b)(6), (b)(3) work exceed 12 hours?

A: Yes

Q: When did you hear about the CO?

A: I didn't shock me. I was in Yuma. I thought since Nov we've been there. It seemed like bad timing to me.

Q: Have you ever heard of CO's fired for readiness?

A: Yes. (b)(6) (b) (3) 10 USC § 130b I should have been gone too.

Post RIMPAC one month of 12 hours days.

Q: Were you surprised the squadron was flying after the Co was relieved?

A: No. it wasn't schooled. It was three days.

Q: When maintenance was 12 on 12 off were the S shops working as well?

A: Yes

Q: Since summer of 2015, maintenance was working 12 on 12 off.

A: Yes sir

Q: Would you say at least 2 weekends a month?

A: Yes sir.

Q: Up until Nov, you worked 14 hours on 10 hrs off?

A: That's safe to say.

Q: can you do tri site?

A: yes just not tri shift.

Q: How is your balance of CDI's CDQs. In Nov were you better off than you were?

A: About the same.

Q: The health of your depth of maintenance?

A: We're meeting the alerts, but 6173 CDQAURs, 6113s have more to make that deficit.

If they're an NSI we're not holding them to being a CDI. They're non-reced for Sgt if they're not a CDI.

Q: When they route a flight schedule; if there are changes, do they route it back around?

A: No sir not all the time.

Is there anything you can tell me about the guys in the back?

[REDACTED] (b) (6) . He was going to reenlist.  
[REDACTED] (b) (6) .

[REDACTED] (b)(6), (b)(3) Don't think he applied himself.

Q: Cell phone use in the back of the a/c?

A: Never heard of it.

## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

1 March 2016 at MCB Kaneohe Bay, Hawaii

We are Air Traffic Controllers at Marine Corps Air Station Kaneohe Bay.

We have a great deal of experience and knowledge regarding aircraft radar telemetry. We have reviewed the radar tracks of what appear to be two aircraft traveling on the northern edge of Oahu between 2230 and 2245 on 14 January 2016.

The radar shows two aircraft flying in close formation. Neither aircraft had active transponders turned on. Both aircraft began a right hand turn facing north. Soon after, the lead aircraft appeared to turn to the left. As soon as the lead aircraft turned left, the two radar tracks seemed to become one. Then, the radar tracks suddenly stopped.

ENCLOSURE (125)



UNITED STATES MARINE CORPS  
MARINE AIRCRAFT GROUP 24  
1ST MARINE AIRCRAFT WING  
BOX 63047  
MCBH KANEHOE BAY HAWAII 96863-3047

IN REPLY REFER TO  
1000  
OPS  
12 Apr 16

From: (b)(6) (b) (3) 10 USC § 130b  
To: Senior Member Marine Heavy Helicopter Squadron 463 JAG Investigation

Subj: AVAILABILITY OF RANGES AND TRAINING AREAS ON OAHU

1. I have been stationed at Marine Corps Base Hawaii, Kaneohe Bay and in a flying status off and on since 2000 for a total of nine years of flight status. During this time, the availability of training areas, landing zones (LZ), and TERF routes have become more restrictive due to a combination of reasons. Initially there were about 15 LZs (including six on Army controlled land) and four TERF routes of varying difficulty located within the Alert area next to Wheeler Army Airfield. Currently there are four Army and three contracted LZs capable of supporting CH53 E's with only one TERF route left.
2. The most important fact is the Marine Corps does not own any training areas or ranges required for higher level training and readiness (T&R) codes in the State of Hawaii. This has led to Marine Aviation (primarily MAG-24, but also transient units) being reliant on the Army and Navy for access to ranges and training areas. This has been further compounded by the fact that the main training area for Assault Aircraft is leased by the Army and the owners have opted to allow the installation of Wind Turbines for electrical generation. They also limit the training LZ's and TERF routes available on a regular basis. The leased lands are also the primary location for advanced external operations, a core MET for the CH53 E's.
3. The list of LZs available for training on Oahu has been decreasing at a steady rate since the early 2000's. With the Marine Corps not having ownership of the training areas, we have been forced to rely on the Army to ensure the long range health of the training areas. This option failed to take into account the "Pivot to the Pacific" and the growing footprint of both MAG-24 and the 25<sup>th</sup> CAB. The already congested airspace will become even more congested over the next several years with these additions. There are already approved plans for additional Wind Turbines along the routes that were previously used as course rules for MAG-24 in and out of the training area.
4. As aircraft readiness and the corresponding pilot/crew proficiency have decreased we essentially made training and operating in Hawaii more challenging. This combination is likely to increase the likelihood of squadrons being forced to "chase the X", and lead to an overall decrease in the MAG being prepared to "Fight Tonight", while simultaneously putting our Marines at greater risk for Mishap. I see this as the largest single risk to aviation in Hawaii.

(b)(6) (b) (3) 10 USC § 130

Pages 128 through 162 redacted for the following reasons:

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## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

1 June 2015 arrived at MAG 24

Q: When you joined the squadron, what was the atmosphere?

A: Nothing to compare it to. Took me little time to warm up. Everyone cordial. The squadron was good. I noticed things as time went on Long work hours. I noticed a change in moral when I joined to early January. I'm at medical most the time. I don't know about a lot the things pilots are dealing with. I felt that it was a steady down slope until the maintenance inspection failure. Steady pressure.

Q: Who was feeling the pressure?

A; I'm speculating depart heads, OC, etc.

Q: You sit on HF board, but when you joined were they working 12 on 12 off?

A: September, October working that schedule.

Q: Did you see morale drop after the inspection?

A: I don't really think they recovered after that.

The squadron was shut down for three weeks, NSI checks cancelled, TFR, holidays. Not a lot of flying...

Q: How was your relationship with the CO?

A: I would say it was more shallow than I would like with a CO.

Q: Was he approachable?

A: He was for me. I thought he always took my recommendations well. I felt like he acted on my recommendations. There was one time during an HFC, a couple of guys who were injured playing rugby didn't think they got the care they wanted while on leave. Was concerned about the of his Marines. He kind of called me out in front of...

Q: Did he know you were on leave when this happened?

A: I don't know.

Q: Was he engaged with the Marines?

A: I did see him walking around pointing things out on the helo...

ENCLOSURE (128)

Q: But the human element?

A: During the HFC's he seemed to know a lot about the marines. But he wasn't always around.

Q: Was he an introvert?

A: I equate everyone to doctors. He was kind of like a brain surgeon. An introvert I'd say.

Q: Did he ever think some of his staff would be afraid to cross the CO over fear that he knew more?

A: I knew he knew medical more than I did. Type of guy.

Q: Did this affect his approachability?

A: I would think so.

Q: is there a drug problem in the squadron?

A: No the positives were for drugs prescribed.

Q: Your (b)(6) (b) (3) 10 USC § 130b  
Do you think his removal from being (b) (6) down affected the squadron.

A: I think losing him would affect the moral of the squadron. I would approach him with issues that needed to go the CO.

Q: Was he kind of detached before he came over to the MAG?

A: When I walked to him it was about getting him back to flying status. He was always approachable always listened. Everyone went to him. The marines felt like they could trust him.

Q: Let's break down the crews. Were any on meds?

A: I did not prescribe any.

Q: Were you surprised that the squadron continued to fly when the CO was relieved?

A: I've never been in a situation like that. I didn't really know that some squadron its' typical that they might not fly that week the normal routine of the squadron was completely different. That Monday I finished sick call in the am. Then I found out about the relief I was surprised I didn't know about the readiness.

Q: were you at the formation right before thanksgiving?

A: No I was leave. I was aware they would work on thanksgiving when I returned from leave. I could tell it was something he didn't want to do.

Q: Did you see (b)(6), (b)(3) after the relief up until the mishap?

A: We had lots of meetings, AOMs. I do remember seeing him. I don't remember talking to him specifically asking him if he was ok.

Q: No one approached you about problems?

A: No

Q: Could you see (b)(6), (b)(3) approaching the CO and being concerned over the relief?

A: I didn't talk to him about his frame of mind that week.

Q: (b)(6), (b)(3)

A: Professional matter of fact type of guy. Always on the ball I would feel safe flying with him.

Q: (b)(6), (b)(3)

A: He was in Australia most of the time.

Q: (b)(6), (b)(3)

A: He was at the MAG most of the time

Q: No HF issues with the aircrew? (b)(6), (b)(3)

A: I don't recall anything brought up

Q: How frequent are the HF boards and who is on it?

A: CO, XO, OpsO, Doc, Safety, and enlisted rep.

Q: Was there a concern over proficiency in the HF boards? Long work hours?

A: We did discuss that. We would discuss this at AOMs on my end I worry about their safety at work and at home.

Q: You were gone at thanksgiving. 12 on 12 off. Were the s Shops working?

A: when I was over there the CO and XO were always there. I think a lot of guys were working weekends that's something I brought up something we need to keep a close eye around the holidays. The week before the mishap I was at TAPS.

Q: During that week who's was in charge?

A: I felt like the new CO was in charge on Thursday

Q: Did you go the welcome aboard brief on Thursday?

A: Everyone was there. (b)(6), (b)(3) wasn't there. This brief interrupted their brief

Q: Do you fly with the squadron?

A: I've flown two times with the, I felt like doing flights with them gave me insight.

Q: When did you find out about the mishap?

A: They called about 1230 I have missed calls at 2am The CO told me there was a mishap. I was in disbelief. I could tell he was distraught. Everyone was zombies. (b)(6) (b) (3) 10 USC § 130 sent me to the North Shore.

Q: When did you find out you would be on the AMB?

A: (b)(6) (b) (3) 10 USC § 130 told me pretty much right away.

At the time we would take care of whatever I could find. I became the head guy for about two hours at Haliewa.

Q: in your mind, with all of the assets, could anything more be done for the rescue effort?

A: Absolutely not. I felt the rescue effort was done extremely well. It was down without I knew immediately when I went to ME office that it was bad.

Rescue one found initial debris floating.

Q: Can you tell us what it was?

A: It was helmets, Rotor blades, Life raft inflated that had to be deflated to bring it back everything was in big bags I asked about HR and they said no. then I took it to the ME office and we learned otherwise. I wasn't opening things there. The first step is to get that to the ME office.

I think there were two boots one had remains.

Q: Right now, the AFME has PID on 9?

A: Correct.

b(6) (b) (3) 10 USC § 11 and b(6) (b) (3) 10 USC § 11

Q: How's your relationship been with them?

A: open. Easy to work with I'm glad we have them.

Q: Is it frustrating the time the recovery takes?

A: the weather and recovery. We were able to see everything and it's too deep.

It was complete surprise when we brought up two.

Q: The dignified transfer. Was it done accordingly?

A: I've never seen but it was well done b(6) (b) (3) 10 USC § 1304 has been the clutch in the whole process. Instrumental.

Q: Did you ever talk to the young copilots? What have they told you before the mishap?

A: I'd ask if you were flying. They didn't seem too stressed out to me the young guys.

Would you say a young pilot on his first tour, you don't know what the expectation level is? You know low moral...

We had a hail and farewell/ Everyone was there because they had to be not because they wanted to be I felt like they wanted to be at home Lots of this is because of the zero defect mentality in the Marine Corps.

Q: Would you say there was an Ops centric flight schedule?

A: I can't speak to that.

Q: HF wise. You sit on the FPC. Any challenges?

A: Like?

Q: Such as people not getting along in maintenance control?

A: I think they were trying to build relationships between the senior enlisted and junior officers. I think b(3) 10 USC was saying that. He was XO until Dec 18. During AOMs they talked about this as the biggest



challenge. For me it was Marines on the individual bases. There were days I was working in medical because the squadron was working.

All of the guys were good medically.

Q: Without being specific. There's nothing medically?

A: The only thing I'd say we already know everyone was fatigued. They're all healthy. They didn't have drugs in their system, We are not able to get toxicology reports as a doctor, there are no outliers I'd be concerned with. Everyone knows everyone was stressed out. Everyone in the aircraft should have been in the aircraft from a medical or HF standpoint.

Q: Are you close to be on the AMB medically?

A: It is hard.

Q: Did (b) (3) 10 USC sit in on the AOM on Wednesday?

A: Yes I introduced myself to the squadron.

Q: After the CO was relieved. There were HF issues?

A: I told them I'm here if you need me.

Q: Were you concerned HF wise. You had a CO relieved? You think there was remorse?

A: Not me.

Q: Not you, but the pilots?

A: I told them to give me a call. At the AOM I had moved offices the day before. I had to pass my new office number then I gave my personal cell.

Q: This is the first time you see (b)(6) (b) (3) 10 USC § 130b. Was he in charge on Wednesday?

A: I was under the perception that the XO was still in charge. He said he was trying to get a feel for the squadron. I think he did everything well that week. I wasn't sure when he was instructed to take over.

Q: You were part of the CG's brief on the hangar deck?

A: I attended.

Q: What did BG Sanborn say?

A: The first half I couldn't hear him I was in the back of the formation and I couldn't hear him very well. Eventually someone gave him a microphone. I think everyone was like what's going on. I don't think it was really clear. I think the formation was in the afternoon. I wanted to get back to see the Cleamson game.

At the initial AOM (b)(3) 10 U said we didn't do our job. We have to protect the CO. that's what I got out of it.

But Sanborn what else?

He said this is unprecedented aside from misconduct. For me it was really weird the former CO didn't come talk with us. That could weigh on people more than..

Q: Do you think that would have made a difference?

A: It would have put me at ease. I can only speculate that someone in the hot seat for their job. It probably would have put them on ease.

The AOM followed the CG's circle. About 1700 I think (b)(6) (b) (3) 10 USC § 1304 was getting his words together.

Q: What did (b)(3) 10 U say in the AOM around 1700 that Monday?

A: Our job is to protect the CO.

Q: Did he give guidance to the squadron?

A: I think he told us the name and gave a little back on the new CO. I can't remember if there was any guidance. I think he said for everyone to reevaluate.

Q: Did he give his plan for the rest of the week?

A: I can't recall. I don't remember any other guidance he gave.

Q: who is in charge?

A: I think everyone felt confident that (b)(3) 10 U was in charge.

We have on sample sent to (b)(3) 10 US. I think last Tuesday

Qualified to fly. No HF. Not on medication. Fatigue was an issue. Cumulative fatigue. Chances are we're not going to get toxicology or labs. None of that would give us data. There's no smoking gun.

I remember bringing up to another flight surgeon that I had concerns. Material readiness of the aircraft. They were breaking. I thought people were fatigued. Just lots of concerns.

Q: Did anyone say this was expected?

A: two months prior, we spoke about it.

Q: Did the CO get involved in the gear emergency?

A: To CO was definitely involved in that process. I remember him talking about eh mattresses.

Going back to the felling you had two months before

CO had to redo this long form. I took over from (b)(10). It wasn't submitted to NAMI. I had to audit all of the jackets. There were administrative issues

Q: How bad was it?

A: Nothing what would interfere with the safety of the squadron. Catching administrative things. We'd send out the weekly hit list. I started to get to the point I had to go over and get this done. We want people to get their shots.

Q: When you went through the jackets, were people medically down?

A: They didn't want to send people to medical. Didn't want to lose them from the shop. I thought it took too much time for me chase down the Marines.

Q: Did it go on deaf ears?

A: I kind of felt like it.

Q: Sloppy squadron. Dirty Squadron. Would you concur? Younger Marines missing consults.

Q: Yes. Many.

Q: For all 12 crew can you recall if any there were any documented aeromedical issues I the three months leading up to the mishap, including appointments, consults or medications.

A: There are no medical appointments regarding nay issues documents, other than flight physical or hearing conservation (audiogram appointments) for any of the involved aircrew. (b)(6), (b)(3) had an optometry check up on 02 Nov, where they said he did not need to wear corrective lenses while flying (20/20 vision).

**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Thursday, March 31, 2016 14:19  
**To:** (b)(6) (b) (3) 10 USC § 130b  
**Subject:** RE: Interview Question  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

(b)(6) (b) (3) 10 USC § 130b

Within three months preceding the mishap there are no medical appointments regarding any issues documented, other than flight physicals or hearing conservation (audiogram appointments) for any of the involved aircrew. (b)(6), (b)(3) had an optometry check-up 02 Nov, where they said he did not need to wear corrective lenses while flying (20/20 vision). I just reviewed each online record on AHLTA looking at previous encounters. I am very sure I did not see any recent encounters (within three months) in hard charts before I gave them to S1, however I do not have access to them now to be 100% sure. If they did have documented encounter at FLAS here it would be in electronic medical record, which is then printed to go in hard chart. I did not prescribe medications or order consults for any of these aircrew.

Hope this helps.

V/r,

(b) (b) (3) 10 USC §

(b)(6) (b) (3) 10 USC § 130b

-----Original Message-----

**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Monday, March 28, 2016 1:30 PM  
**To:** (b)(6) (b) (3) 10 USC § 130b  
**Cc:** (b)(6) (b) (3) 10 USC § 130b  
**Subject:** Interview Question

Good Afternoon (b) (3) 10 USC,

I hope the weekend went. We have a few more cleanup questions for our investigation and was wondering if you wouldn't mind answering via email vice meeting up again.

For all 12 crew can you recall if any there were any documented aeromedical issues in the three months leading up to the mishap, including appointments, consults or medications.

## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

Mid Nov 2014 joined squadron, I joined after the CNAF. Day of USMC Ball.

Q: During the transition into summer before ALMAT. There was key SNCO turnover, what was the morale the culture?

A: It was odd at the time looking back. In a year, outside (b)(6) (b) (3) 10 USC § 13, I'd been in the unit longer than anyone else. Less than a year every SNCO left. Many of the program managers left prior to the Wing Maintenance Inspection.

Q: Is there a challenge with MMEA?

A: It's almost impossible to work with them due to policies in place. The number of personnel. 90 percent of the time SNCO's were coming off B Billets. Senior Corporals don't come here due to service limitations. Almost all quals are built from within. We have a number of leadership challenges. (b)(6) (b) (3) 10 USC § 1 on MERF D for example. You can't cross deck, etc. Tried to move him a number of times. HQMC doesn't more leadership challenges. He remains at the MAG until we get a replacement for him. We didn't want him back b/c lose trust and confidence in the Marines. After the mishap HQMC is saying they are getting us qualified people. The most recent we got came right off the drill field. 367 has the same concerns.

Q: How was your relationship with CO?

A: Great working relationship.

Q: Every time you would ask 12 on 12 off you would get different answers. When did it start?

A: If you ask a junior Marine when it started, he'd say a long time ago. 12 on 12 off. 10 hours were normal work hours. I'm going to guess the week after the Marine Corps Ball. We went to 12 on 12 off until we reached a sustained 50 percent RBA.

Q: By whom?

A: That's a good question. I asked (b)(6) (b) (3) 10 USC § 1304. He didn't like it. After thanksgiving (b)(6) (b) (3) 10 USC § 1304 made that call.

Q: Did you caution him about the Thanksgiving 96?

A: From the CO the direction came. 12 on 12 off was actually 14 on 10 off. I addressed it in a staff meeting. I knew morale was low due to work hours. Probably right after Thanksgiving. So the maintenance departmeny addressed this. There was a turnover with day and night crew and day crew would depart. There would be a gap and day crew would start. That was sustained until the day of (b)(6) (b) (3) 10 USC § 130b relief.

ENCLOSURE (129)



Q: 10 hour shift now. Is morale improving?

A: I think so. The mishap brought the unit closer. I think they're still a little skeptical about the future.

Q: When MERF D was cancelled, what was the perception?

A: I think it was a disappointment.

Q: Have you seen the latest survey?

A: The CO briefed it yesterday.

Q: When the CO was relieved, were you surprised?

A: I was a little surprised. But I can say it didn't surprise me. He was under a lot of pressure. I think he saw a turn, but that hasn't come until the last month or so.

Q: In your talks with the (b)(6) (b) (3) 10 USC § 130b, did you ever hear of the wing calling to the squadron?

A: I've heard of that. Ive heard of the wing calling lots of people but can't pin point a specific person.

Q: How did you find out about the relief?

A: (b)(6) (b) (3) 10 USC § 130b. Gave Guidance. I returned to the squadron and spoke with him briefly. He left and myself, the XO, and (b)(6), (b)(3) gathered in my office and discussed a plan going forward.

Q: At that point, who was in charge?

A: The XO.

Q: What was his guidance?

A: I think he said we have to start preparing for the new CO. that slowly came out over the week. Our best guess was Monday.

Q: Did you have a SNCO meeting?

A: That was a little bit of confusion the way this came down. (b)(6) (b) (3) 10 USC § 130b guidance was to wait until CG came down to talk. The XO told the officers. They went downstairs and informed their SNCO's. He brought the SNCO's into the ready room and discussed the way forward. I don't remember the CG's comments on the hangar deck. Tough to hear. Then he told some stories about his family and some analogy. Following my conversation with the Marines, I brought the SNCO's to the ready room and discussed the relief with them. I thought it was a good conversation. We talked about working on communications. We talked about our officer SNCO relationships that were not great.

Q: Why?

A: I think some SNCO's felt they were not being heard. Certain SNCO's didn't like the way things were being done.

Q: During periods late summer fall. Everyone said they worked a lot of weekends?

A: After the failed inspection, they were working. I think

Q: Was the CO approachable with his officers?

A: I don't know why they wouldn't have been. I never saw him talk do to any of them.

Q: Was there an ops heavy flight schedule when maintenance was trying to get planes up? How was the ops maintenance relationship?

A: There were lots of challenges. Lots of stuff imposed by HQMC, AFB..lots of things competing for time. Next thing you know you have to send your Marines to BITS when the a/c are not cooperating.

Q: Were people downing planes?

A: I would go to control in the evening and 4 a/c would be up. Then in the morning I'd go in and find 1 a/c up. Control would say they found downers during inspections over the night. I brought that up to the SNCOs. They said it's extremely hard to do. Enough checks and balances. From what I was told they believed that's not what was happening.

Q: After the relief were you surprised the next day you are doing a VBSS1 then night the following night?

A: It didn't surprise me. Pilots were trying to get back in the air.

Q: Were the maintainers tired?

A: I think everyone was tired. I know families were tired. It was tough to manage the Marines. Going home to get beat up by their wife. That's the thing I told (b)(6) (b) (3) 10 USC § 130b We've never had a legal meeting. We've had NJPs, but we never had a legal tracker.

Q: What was the NJP?

A: The (b)(6) (b) (3) 10 USC § 130b, (b) (7)(C) did. Don't know if I'd call him a problem.

Q: Why didn't you do it before?

A: It was scheduled for Monday. The plan was to hold it Monday. We held it on Tuesday. He took responsibility. We decided not to wait. I didn't want to welcome him aboard with an NJP.

Q: When did you find out about the mishap?

A: Close to 2300. XO called me. I came in immediately.

Q: Pretty efficient checklist?

A: I spent most of my time talking to the Marines down stairs.

Q: Can you describe [redacted] (b) (6) wives coming to the squadron?

A: There were some rumors that got out to them. A Marine ran upstairs and said there were some wives here. We brought them to the XO's office. Briefed them. Told them we were doing everything possible. [redacted] (b) (6) frustrated. I got [redacted] (b) (6) (b) (3) 10 USC § 130b to drive them home. Then they came back and they sat in the heritage room. That's where [redacted] (b) (6) (b) (3) 10 USC § 130b [redacted] (b) (6), (b) (3) on the aircraft being unsafe and dirty.

Q: You sit on the FPC? [redacted] (b) (6), (b) (3) Was he texting with his wife the night of the mishap?

A: I'm not aware of that.

[redacted] (b) (6), (b) (3)

Q: Any HF for the flight crew?

A: No. The only one I can remember was [redacted] (b) (6), (b) (3) Alcohol related incident or two. For the most part, they were all phenomenal Marines all had their challenges. [redacted] (b) (6), (b) (3) intended to get out. Putting in lots of hours.

Q: Do you think the squadron has a drug problem?

A: I wouldn't have thought so until a month ago until the [redacted] (b) (6), (b) (3) (avi) thing came out. VMU is pretty close. Then [redacted] (b) (3) 10 USC § admitted to X use. There were two Marines on MERF D we suspected. We had an avi marine who popped for X. I think that weekend we were going to do a Thursday, Friday, Sunday piss test. That got turned off.

Q: [redacted] (b) (6) (b) (3) 10 USC § 130b. He's part of the command team. You lost him, who was the acting XO?

A: I guess it would have been [redacted] (b) (6) (b) (3) 10 USC §

Q: With MERF D and MAWTS you had pressure?

A: Yes always there. But the true pressure was in maintenance. I thought the flying stuff was a reward for maintenance's work. With the exception of self-induced things we expected a turn for healthy aircraft.

Q: Were Marines dreading coming back from MERF D?

A: I don't think so. It's like any deployment sir. We are qualified. super stars. Been there. A sense of pride and doing great work down there. There might have been some of that. but they worked 6 days a week hard. Got one day a week off. Bragging rights.

Q: So the change of command was in February last year, there was a LV det at PTA in January. Came back change of command. From there all the way to Thanksgiving, you were struggling to maintain REA. Was wing, MAG, PMA doing everything they could to assist?

A: Even early on when we weren't working weekends Feb April the stress in the maintenance department was always there. I've always felt the pressure was the same. The pressure was added after failing the inspection. We had a thousand pound weight after the inspection. Maintenance has always been a challenge.

Q: Did you ever worry about safety of flight? As SgtMaj, what kept you up at night? What concerned you?

A: It was just turning the corner. We got to get to a normal battle rhythm that's sustainable. Moral was low because of the aircraft. Get to the corner. Get healthy and hopefully everything would be alright.

Q: Did you have a good balance of Marines? The right people in the right jobs?

A: It's hard to answer. For example (b)(6) (b)(3) 10 USC § 1304. He could work in any shop. FL needs his guidance. I think (b)(6) (b)(3) 10 USC § 1304 was put in the same position in another place. Career development almost has to take a back seat. We could use stronger controller, but who. You are one deep in many positions.

Q: Were you surprised no one was relieved after the maintenance inspection?

A: I guess so. But looking at the TO, who do I replace them with. Many had been in the position for a month. The main problem was (b)(6) (b)(3) 10 USC § 1304. He's at the range now. When (b)(3) 10 USC was the (b)(3) 10 USC, he had HF issues (b)(6). I wasn't privy to the officers. He was juggling work and family.

Q: SNCOs weren't out on the line?

A: Most didn't have the quals. They had to work on those. (b)(3) 10 USC was confused when XO signed on Wednesday flight schedule for Thursday.





## Summary of Interview

(b)(6) (b) (3) 10 USC § 130b

on Thursday February 3<sup>rd</sup> at 0800

MAG-24 Conference Room.

(b)(6) (b) (3) 10 USC § has worked in HMH-463 since October of 2012 as a 6113.

-Human factors affecting the whole squadron was tired based off of long work hours.

(b)(6) (b) (3) 10 USC § noted that no crew members arrived before their crew day began. QA was good at ensuring no maintainers or crew chiefs stayed past the assigned crew day in the evenings.

-lots of pressure was felt on the squadron as a whole starting around the Thanksgiving timeframe. During the Thanksgiving holiday everyone had to come in Saturday and Sunday which was hard on the Marines, especially the ones with Families.

-cross countries were seen as a good thing for the squadron moral.

(b)(6) (b) (3) 10 USC § was called in on November 15 because of a stuck gear on an aircraft returning from a cross country. Challenge finding gear to prepare for the incoming aircraft that day because items were recently moved around.

-junior pilots would question CDI's on maintenance practices.

-flight line had a high turnover rate with SNCO's

-while working in phase, (b)(6) (b) (3) 10 USC § was questioned about practices. Lots of miscommunication and a theme of constantly chasing answers.

(b)(6) (b) (3) 10 USC § worked in phase for 5 months. Lots of pressure from previous MMCO who was at the Squadron early mid-2015.

(b)(6) (b) (3) 10 USC § moved to flight line in August of 2015.

-aircraft 05 and 08 were on the cross-country the weekend before the mishap. 05 had a MGB sump chip light.

(b)(6) (b) (3) 10 USC § informed the crew before the return of flight of the cross-country that the CO got relieved on Monday the 11<sup>th</sup>. Everyone seemed to be in shock and disbelief.

-the crew chiefs were noticeably excited prior to the flight on Wednesday. Glad to be flying.

ENCLOSURE (1)

-The crew chiefs took part in the Thursday 1700 meeting with the incoming CO (b)(6) (b) (3) 10 USC § 130b on 14 January.

-(b)(6) (b) (3) 10 USC § received a call from a family member at 0300 and then went to the squadron with (b)(6) (b) (3) 10 USC § 130 on the evening of the mishap.

-snapchat photo from (b)(6), (b)(3) showed the crew chief with night vision goggles on stating "I have the coolest job in the world". Photo received on or about 2200 on the 14<sup>th</sup> of January.

-(b)(6), (b)(3) would have spoken up if he was not well rested for the flight and would have taken himself off of the flight.

-squadron felt let down that MRF\_D was taken away.

-Medical was turning away HHM-463 personnel right after the mishap even until the 21<sup>st</sup> of January, had to reschedule for the 28<sup>th</sup> of January for a flight physical.

**WARNING**

The HNVS system provides for increased situational awareness for the PAC. The FLIR image and symbology shall not be used exclusive of other flight instruments.

1. Spatial disorientation, attitude, airspeed, bank, and altitude limitations have been reviewed as required.
2. The Instrument Flight Checklist has been completed.
3. Appropriate publications are available.
4. Clearance/departure instructions reviewed by cockpit aircrew.

Specific cockpit crew responsibilities for the pilot at the controls and the pilot not at the controls regarding flight parameters, communication, navigation, and other cockpit duties not directly affecting physical control of the aircraft shall be performed as briefed. In addition, approach procedures for the primary instrument approach at the departure field shall be reviewed to facilitate a return in the event of an emergency during takeoff or departure. The pilot at the controls shall advise the copilot should symptoms of spatial disorientation be experienced.

**19.3.7.2 PNAC**

The PNAC shall monitor aircraft performance, advise the PAC of any discrepancies, and inform the PAC, when briefed, when attitude, airspeed, angle of bank, or altitude limitations are approached. He shall be prepared to take control of the aircraft if the PAC requests assistance because of spatial disorientation or if a loss of control appears imminent. The PNAC shall advise the PAC should symptoms of spatial disorientation be experienced. To avoid spatial disorientation, the PNAC shall advise the PAC when the FLIR system is initiated.

**WARNING**

The observer seat shall not be occupied during takeoff or landing.

**19.3.8 En Route****19.3.8.1 HAC**

The HAC assigns responsibility for, and ensures periodic monitoring of, performance instruments, caution and advisory panels, and fuel management panel. He ensures a lookout is maintained and periodically confers with the aircrewman to ascertain cabin conditions.

**19.3.8.2 Aircrewman**

The aircrewman shall:

1. Be responsible to the HAC for the condition and conduct of operations in the cabin compartment.
2. At all times, especially during night and simulated instrument flight, maintain a lookout for other aircraft.
3. Ensure passengers remain in their seats with their safety belts fastened unless directed otherwise by the HAC.
4. Alert HAC to unusual conditions or potentially hazardous situations.
5. Enforce smoking regulations.
6. Ensure security of internal cargo.

3. Provide troop life preservers to passengers before overwater flights and ensure they are properly fitted and donned.
4. Visually check each passenger to ensure he is seated and has his safety belt properly fastened.
5. Secure any loose baggage or equipment carried aboard by the passengers.
6. Make a positive statement to the HAC reporting the following:
  - a. Number of passengers embarked.
  - b. All passengers safety belts fastened.
  - c. Cabin occupants and/or internal cargo ready for taxi/takeoff.
7. Ensure all troop life preservers are removed and returned when overwater flight is completed.
8. Signal passengers when clear to debark.

#### **19.4.4 Formation Flights**

##### **19.4.4.1 HAC/Copilot**

Refer to Part III of this manual.

##### **19.4.4.2 Aircrewman**

The aircrewman shall:

1. Advise the HAC of any change of the formation and periodically provide status on flight integrity.
2. Advise the HAC of any other aircraft in the vicinity of the formation.
3. Advise the HAC of any uncomfortable situation.

#### **19.4.5 Shipboard-Based Procedures**

##### **19.4.5.1 HAC/Copilot**

Refer to Part III of this manual.

##### **19.4.5.2 Aircrewman**

In addition to all normal responsibilities, the aircrewman shall:

1. Ensure the aircraft tiedowns are slack prior to starting engines and engaging the main rotor.
2. Ensure all aircraft tiedowns and chocks are removed prior to takeoff and verbally reported to the HAC.
3. Ensure ramp area is clear prior to operation.

#### **19.4.6 Paratroop Delivery Operations**

##### **19.4.6.1 HAC/Copilot**

Refer to Part III of this manual or other applicable directives.

##### **19.4.6.2 Aircrewman**

In addition to all normal responsibilities, the aircrewman shall:

			Requirements By Flight Status				
			DIFOPS			DIFDEN	
Type Qualification	Initial Qualification Required	Renewal Interval	1310/1311/1511	1312/1320/1512/1812	USMC	1300/1310/1510/USMC	Waiver Authority
NATOPS Qualification	N/A	Annually	Yes	No (1)	Yes	No	None
Instrument Rating	Yes	Annually	Yes	No (1)	Yes	No	COMNAVAIRFOR/CMC
Annual Pilot Hour Minimums	No	Annually	100 Hrs (5)	100 Hrs (5)	100 Hrs (5)	None	COMNAVAIRFOR/CMC COMNAVAIRFORES/ CG FOURTH MAW TYCOMS
Annual Instrument Hours	No	Annually	12 Hrs (5)	12 Hrs (5)	12 Hrs (5)	None	COMNAVAIRFOR/CMC COMNAVAIRFORES/ CG FOURTH MAW
Annual Night Hours (7)	No	Annually	12 Hrs (5)	12 Hrs (5)	12 Hrs (5)	None	COMNAVAIRFOR/CMC COMNAVAIRFORES/ CG FOURTH MAW TYCOMS
Physical Examination	Yes	Annually	Yes	Yes	Yes	Yes	BUMED/BUPERS/CMC
NASTP	Yes	4 Years (2)	Yes	Yes	Yes	No (6)	TYCOMS (7)
Emergency Egress Training	Yes (3)	Annually (4)	Yes	Yes	Yes	No (6)	TYCOMS

NOTES:

1. Required only if functioning as pilot in command.
2. Refer to paragraph 8.4.
3. Dynamic ejection seat training required prior to flight in aircraft equipped with ejection seat.
4. Static training required prior to flight in different type ejection seat. (Refer to paragraph 8.4.)
5. Annual minimums for naval aviators who have completed 20 years of aviation service are 48 pilot hours, 6 instrument hours and 6 night hours.
6. Required if in flying status with waiver.
7. Initial training requirements may be waived by COMNAVAIRFOR/CMC only.

**Figure 11-1. Aviation Qualification/Currency Requirements Summary  
(Naval Aviator)**



**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Thursday, March 24, 2016 7:33  
**To:** (b)(6) (b) (3) 10 USC § 130b  
**Subject:** RE: extension paperwork  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

Good morning Sir,

Yes, the squadron wrote eleven instrument extensions during that time period.

-----Original Message-----

**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Wednesday, March 23, 2016 9:00 AM  
**To:** (b)(6) (b) (3) 10 USC § 130b  
**Cc:** (b)(6) (b) (3) 10 USC § 130b  
**Subject:** extension paperwork

Good morning (b)(6) (b) (3) 10 USC § ,

We just spoke a few seconds ago regarding HMH-463 instrument extension paperwork from the 463 Safety Shop. From November 2015 to January 2016 the squadron wrote eleven instrument extensions?

Please let me know if this is correct. We are using this information to gauge the CH-53 communities readiness effecting proficiency.

Thank you for your time and I hope you have a great day.

Very Respectfully,

(b)(6) (b) (3) 10 USC § 130b

## CHAPTER 2

### TACTICAL FORMATIONS

**2.1 Introduction.** Formation flight and tactical formation maneuvers provide flight leaders a standardized, rapid means of controlling and effectively utilizing a flight. The flexibility of each formation and maneuver allow aircraft to provide continuous mutual support in terms of both lookout doctrine and weapons employment while allowing freedom of movement for navigation and aircraft separation, and building a common situational awareness.

#### 2.2 Principles of Formation.

**2.2.1 Elements of a Formation.** The basic formation element comprises two aircraft, termed a section. All types of formations are derived from the section. Three to four aircraft (two sections) form a division, and two or more divisions constitute a flight.

**2.2.2 Basic Tactical Formations.** There are two types of tactical formations: Combat Cruise and Combat Spread. By use of tactical formations, the flight leader can maintain formation integrity and still maneuver the flight with few restrictions. The tactical formations outlined here provide this flexibility. For tactical formation considerations in the night environment, see the *MAWTS-1 NVD Manual*.

**2.2.2.1 Combat Cruise.** Combat Cruise allows the wingman to fly anywhere on a rearward arc extending from 10 degrees forward of the abeam position on either side of the lead aircraft. In the absence of other mission considerations, the preferred wingman position is 30 to 45 degrees off the lead's tail with a minimum of 3 to 5 rotors separation and level in altitude. See **Figure 2.1**, Combat Cruise. Prolonged flight in the area within  $\pm 15$  degrees of the tail should be avoided. If the formation consists of more than two aircraft, the Dash 3 aircraft will fly bearing off the lead with enough separation that the Dash 2 aircraft is never denied freedom of movement. The positions and distances described are guidelines only; however, the latitude provided by this formation should not be used as an excuse for sloppy formation flying. Combat Cruise is designed to maximize flexibility and maneuverability for the section. Terrain, visibility, and the tactical situation will affect the position of the wingman, but the wingman should attempt to position the aircraft in a location that allows for both aircraft to mutually support the other with lookout and weapons employment. In rough terrain, the formation is normally much tighter than in open terrain. When the enemy situation is unknown or attack could come from any direction, the wingman should remain closer to the 30 to 45-degree bearing.

**2.2.2.2 Combat Spread.** Combat Spread is flown by the wingman within  $\pm 10$  degrees of the lead aircraft's abeam, with a minimum of 3 to 5 rotors lateral separation. See **Figure 2.2**, Combat Spread. Lateral separation varies depending on terrain, visibility, need to maneuver, and enemy weapon envelopes. This formation can provide good defensive lookout, primarily on the axis of advance. Combat Spread is also appropriate when crossing large open areas to minimize exposure time.

ENCLOSURE (174)

**2.3 Divisions and Flights.** Based on METT-TSL considerations, flights may divide into two or more maneuver elements. In order to enhance formation maneuverability, each element should maintain adequate clearance from the other while maintaining flight and element integrity. There are two types of formations for flights of aircraft: Trail and Combat Cruise.

**2.3.1 Divisions or Sections in Trail.** Each maneuver element in the flight will follow the lead maneuver element. METT-TSL will determine the distance between maneuver elements. Separation between maneuver elements will be briefed and established by distance based on time. Flight leaders should keep in mind that trail formation with minimum separation may be more recognizable from higher altitude by threat aircraft. See **Figure 2.3, Divisions in Trail.**

**2.3.2 Divisions or Sections in Combat Cruise.** The Combat Cruise formation will allow each maneuver element to fly anywhere on a rearward arc from 10 degrees forward of the abeam position on either side of the lead element. In the absence of other mission considerations, the preferred subordinate element position is 30 to 45 degrees off the lead element with a minimum of 3 to 5 rotor separation and level in altitude. Prolonged flight within  $\pm 1$  degrees of the tail should be avoided. Lateral separation will be briefed and established by distance. The second maneuver element will fly on either side of the lead maneuver element and utilize radius of turn to stay with the lead maneuver element. The third maneuver element should fly on the opposite side of the lead maneuver element from that of the second maneuver element, thus balancing the flight in a fingertip formation. The third maneuver element is allowed radius of turn to stay with the lead element and should never deny the second element room to move to either side of the lead element. The third maneuver element is allowed flexibility to fly on the same side of the flight as the second element if situations dictate (e.g., rough or mountainous terrain, and moon position). Increased flight lookout doctrine and decreased chance of visual detection from threat aircraft are provided by maneuver elements flying Combat Cruise within a flight. See **Figure 2.4, Divisions in Combat Cruise,** and **Figure 2.5, Tactical Formations.**

**2.4 Tactical Formation Maneuvering.** Tactical formation maneuvering is a basic skill with which all assault pilots must be thoroughly familiar. There are nine basic tactical flight formation maneuvers: tactical (tac) turns, center turns, in-place turns, split turns, cross turns, break turns, dig, pinch, and cover. Formation maneuvering should be executed by the basic maneuver element; the section. In cases where the number of aircraft does not allow for section integrity, such as a division of three aircraft, then division integrity should be maintained for maneuvering. The single aircraft (Dash 3) should not break formation to maneuver independently of the section.



**WARNING**

During formation maneuvering, aircraft may be in a level horizontal plane, converging laterally. When this occurs, the tactical wingman always has the ultimate responsibility for maintaining adequate aircraft separation by varying the airspeed, altitude, or AOB.

**12.1.4 Crew Rest and Circadian Rhythm.** Night operations require more vigilance than day flying, so adequate crew rest is a must. Fatigue offers one of the greatest potentials for crew error at night. Inadequate sleep and a change in circadian rhythm associated with night flying causes fatigue. Control of fatigue consists of proper diet, exercise, sleep, and operational scheduling. Minimum crew rest requirements are defined in OPNAVINST 3710.7.

**12.1.5 Crew Responsibilities.** Given the challenges of operating in the night environment and during periods of reduced weather, the fundamentals of aircrew coordination become even more important.

**12.1.5.1 Pilot at the Controls (PAC).** Due to reduced visibility, the PAC needs to maintain a more aggressive outside scan, while also scanning key flight performance gauges. All other cockpit duties should be left to the PNAC. Aircraft control should be slower and more predictable than during day VFR flying. Aggressive maneuvering should be minimized.

**12.1.5.2 Pilot not at the Controls (PNAC).** To help keep the PACs scan outside, the PNAC should be extra vigilant in handling all cockpit duties (i.e., transferring fuel, controlling radios, GPS, and FLIR). In most instances, reduced visibility requires more aggressive navigation.

**12.1.5.3 Aircrew Responsibilities.** Periods of reduced visibility will require aircrew to exercise a more aggressive outside scan. Furthermore, aircrew must not hesitate to call out potential obstacles; never assume that other members of the crew have seen the same obstacle. Aircrew may also assist the PNAC with monitoring the cockpit gauges and with navigation.

**12.1.6 Training.** Key elements of night operations training include:

- Progressive training through decreasing light levels.
- Understanding the capabilities and limitations of aircraft systems at night.
- Understanding the physiological impact of night operations.
- Unique planning considerations and flight techniques.
- Repetitive practice of night flying skills.

**12.2 Night Operations Planning.** Generally, night operations considerations deal with the limitations imposed by the reduction in visual acuity, the necessity for reliance on positive and more-strict procedural aircraft control procedures. The necessity for caution on the part of the pilots and aircrew both characterize and complicate night operations. Detailed generic mission planning TTPs can be found in **Chapter 1**, "Mission Planning, Briefing, Execution, and Debriefing," whereas this section focuses on aspects peculiar to NVG operations. For specific NVG missions (i.e., aerial refueling or externals), refer to the NVG sections of those respective chapters. A slower tempo of activity must be accepted in night operations. The use of smaller elements will necessitate higher fidelity in objective area timing and sequencing as compared to daytime operations. Additionally, integration among increased numbers of smaller elements will complicate all aspects of a plan, from join-ups and routing, to deconfliction of fires and communications procedures.

**12.4 Execution.** Detailed NVD flying procedures and techniques are spelled out in the MAWTS-1 *NVD Manual*. This section contains additional TTPs to assist in effective, tactical, and safe NVD operations from start up through egress from the objective area.

**12.4.1 Pre-Takeoff.** Most cockpit duties take longer at night, so everything that can be adjusted, set up, or programmed prior to taxi should be done. Some examples include.

12.4.1.1 Check controllability of spotlights and set them up in a position to aid in taxiing and landing.

12.4.1.2 Check cockpit for NVG incompatible lighting and tape or cover them.

12.4.1.3 Verify NVG infinity focus, then attach and program HUD.

12.4.1.4 Use reflection from spotlight to illuminate tip path plane for safe taxiing.

12.4.1.5 Be aware the nose landing gear door peanut light may cause windscreen glare and present a visible overt light that might be seen by threats. Consider pulling the LANDING GEAR DOWN circuit breaker to secure the nose landing gear door peanut light.

12.4.1.6 Verify FLIR optimization and a 4- to 5-degree nose down angle to ensure constant sight picture of landing zone during approach profile.

**12.4.2 Takeoff.** Before takeoff, a visual reconnaissance of the projected departure path should be conducted by all crew members. The purpose of this reconnaissance is to identify any potential obstacles on the flightpath or immediately adjacent to the path in order to offset the limiting effects of the goggles' FOV. Additionally, the FLIR can be utilized to compensate for this limitation in FOV by augmenting the obstacle reconnaissance. Takeoff can be executed from the ground or a hover and emphasis during the transition should be obstacle clearance.



#### WARNING

Extreme nose-low attitudes should be avoided during takeoff on NVGs to preclude inadvertent descent. The pilot not at the controls should monitor the cockpit instruments to ensure a positive rate of climb immediately after takeoff. Aircrews should immediately notify the pilots of any perceived settling or drift during takeoff.

**12.4.3 En Route Considerations.** Flight profiles, weapons conditions, lighting configurations, and formations procedures should all be planned in anticipation of possible enemy contact.

12.4.3.1 Formation. A common technique is to fly lead's 5 or 7 o'clock, keeping lead within a 40-degree FOV, while maintaining forward situational awareness. Care should be taken against flying in lead's 6 o'clock position. First, as in day operations, flight in that sector removes the wingman from lead's FOV. Moreover, from that position most visual cues for attitude and closure rate are lost. As a rule of thumb, formations will get tighter and maneuver less as light levels decrease. Understand that NVG limitations dictate a more conservative approach regarding closure rates. In low light ambient conditions, a



wingman should stay close enough to the lead aircraft to recognize any attitude, altitude, or airspeed changes. Greater distances reduce visual cues needed to effectively maintain position in the flight and judge closure rates, as well as reduce the ability of each aircraft to provide mutual support. In extremely dark or urban areas, wingmen should consider using a step-down position on lead to place lead more on the sky line. When utilizing step-down position, wingmen should be cognizant of lead's field of view (e.g., aux tank obstructing view of wingman).

12.4.3.2 Altitude/Airspeed. Generally speaking, en route altitudes should be flown as high as the threat will allow while still providing reference to the ground. Minimum altitudes should ensure adequate obstacle clearance but at no time be lower than 50 feet AGL. During low light level conditions, maximum altitude flown will more likely be lower than during high light level due to reduced ground reference. Increased altitudes will reduce aircrew workload. Consider operating at reduced airspeeds (as compared to daytime operations) based upon predicted NVD performance and atmospheric forecasts. High-speed/low-level flight through mountainous terrain can easily lead to a situation where the CH-53 aircrew can out fly the capabilities of the NVGs. Airspeeds in the range of 80 to 100 KIAS in mountainous terrain allow the CH-53 aircrew enough reaction time to avoid obstacles and terrain. Flight through flat open areas can be planned for 100 to 130 KIAS. A common tendency among aviators is to overfly the capabilities of the NVGs. Therefore, selected airspeed should be based not only on terrain but also on light levels, visibility, and aircrew experience. The selected airspeed should maximize pilot reaction time in order to avoid obstacles when flying on NVGs.

12.4.3.3 Lighting. Night tactical operations should, to the maximum extent possible, make exclusive use of IR position, formation, and anticollision lights. In LLL conditions, consider increasing IR lights to full intensity. Analysis indicates that the use of blade tip and IR position lights does not significantly increase the risk level to the CH-53, even against an enemy with known NVD capabilities. The CH-53 IR lighting is aspect-sensitive and not generally visible from the ground at tactically significant ranges. Steady dim or bright aircraft navigational lights may be used momentarily, as necessary, to provide a reference for visual acquisition during aircraft breakup and rendezvous evolutions. Certain missions conducted in close proximity to the enemy may require that all external lights be extinguished. Lighting discipline is critical for CH-53 tactical flight operations and should adhere to **Table 12.8**, Standard CH-53 Lighting Conditions. CH-53 aircrews must constantly be on guard to avoid giving unnecessary visual cues to threat weapons systems operators due to poor lighting discipline. Lip lights, finger lights, chemsticks, and console and instrument lights all provide enough light for an enemy gunner to visually detect the CH-53 with the naked eye at tactically significant ranges. Detailed aircraft lighting considerations are in the MAWTS-1 *NVD Manual*.

## CHAPTER 17

### TACTICAL AIRCREW COORDINATION

**17.1 Introduction.** Given the complexity of the modern battlefield, and the challenging environments that CH-53 crews are expected to operate in, effective aircrew coordination can be the difference between mission success and failure. As a highly versatile and heavily utilized assault support platform, the MAGTF commander will continue to look to the CH-53 community for a variety of missions. The purpose of this chapter is to give general tactical aircrew coordination techniques and procedures for CH-53 aircrews. Aircrew coordination for specific evolutions (i.e., externals and air-to-air refueling) can be found in their respective chapters of this manual.

**17.1.1 Cockpit Organization.** The CH-53 cockpit design offers each pilot the capability of performing the majority of mission tasks, which provides flexibility by allowing either pilot the ability to perform a given task. This flexibility can lead to a lack of standardization and potential mission degradation. Often tasks are performed by a specific crew member based solely on crew position and not on individual capability or task loading. Other times, this flexibility results in multiple crew members attempting to perform the same function. Perhaps the most dangerous situation occurs when air crew members assume that another is performing a specific task when in fact it is not being accomplished.

**17.1.2 Crew Resource Management.** Crew resource management (CRM) is designed to enhance crew coordination through the increased awareness of seven associated behavioral skills: decision making, assertiveness, mission analysis, communication, leadership, adaptability/flexibility, and situational awareness (SA). Refer to OPNAVINST 1542.7 for amplifying remarks on the CRM program.

**17.2 Standardization.** Procedural standardization enhances CRM. Standardization is achieved through adherence to Naval Air Training and Operating Procedures Standardization (NATOPS), training and readiness manuals, this document, the NTTP 3-22.5-CH53 and the NTTP 3-22.5-ASTACSOP. The importance of all responsibilities must be continuously stressed to each crew member.

**17.3 Crew Tasking.** The first step toward effective crew tasking is to recognize the capabilities within the crew based on the requirements of the mission, and to share the workload accordingly. Task prioritization and task delegation are the recommended methods to adjust crew tasking for training qualified and proficient crew members.

**17.3.1 Task Prioritization.** A well-trained and well-briefed crew can prioritize mission tasks to satisfactorily accomplish every mission. With more complex missions, the ability to accomplish all tasks assigned can become overwhelming. This may occur because of missions flown in the TERF regime, NVD operations, HAAR, externals, and increased mission tasking (in-flight tasking with flight leadership responsibilities). When aircrews become saturated, some mission tasks will either be delayed, poorly completed, or not accomplished.

**17.3.2 Task Delegation.** Task delegation clearly delineates specific mission tasks to each crew member for each stage of a given mission. Prior to mission launch, each crew member knows exactly which functions are required to be performed during each phase of the flight.

Table 17.1 Internal Communication System Brevity Codes (1 of 2).

Term	Meaning
"BLIND"	Aircrew has no visual contact with a friendly aircraft, applies to friendlies in general as well.
"BREAK RIGHT/LEFT"	Directive for the pilot at the control (PAC) to execute a maximum performance turn in the direction indicated. Ninety degrees of turn is standard; if more/less turn is required, a heading call should follow the break turn direction.
"BROWN OUT" "WHITE OUT"	Descriptive call, followed by crew position, indicating that the crew member has lost sight of the ground during a degraded visual landing.
"CHECK NAV"	Descriptive call from the non-navigating pilot/aircrew member to verify that the navigation is correct.
"CHECKPOINT, _ O'CLOCK, _ METERS"	Descriptive call from the navigating pilot to build aircrew SA.
"CONTINUE"	Directive call from the pilot not at the control (PNAC) to maintain present aircraft maneuvers.
"CLEAR LEFT"	Descriptive call by aircrew that PAC is clear to maneuver aircraft left; clear of obstacles, hazards, and terrain.
"CLEAR RIGHT"	Descriptive call by aircrew that PAC is clear to maneuver aircraft right; clear of obstacles, hazards, and terrain.
"EASY RIGHT/LEFT"	Directive call from the PNAC to execute a 10-degree angle of bank (AOB) turn in the direction indicated.
"FLARES, FLARES, FLARES"	Directive call from one crew member/member of the flight, to the other to expend flares, followed by threat location and trend.
"HEADS DOWN"	Directive call from the PNAC to the rest of the aircrew to maintain a more vigilant lookout scan or increase lookout coverage because the PNAC is not maintaining lookout.
"HEADS UP"	Descriptive call from the PNAC that lookout is being maintained. Follows "HEADS DOWN" call.
"IN SIGHT"	Aircrew has mark or specific feature in sight.
"LEFT SEAT"	Aviator occupying left seat.
"LEFT SIDE"	Descriptive call indicating that another aircraft within the flight is on the left side of the aircraft. This call will be followed by a distance in rotors to increase SA.
"LEFT GUN"	Crew chief (CC)/aerial observer (AO)/gunner occupying left window.

Table 17.1 Internal Communication System Brevity Codes (2 of 2).

Term	Meaning
"NO JOY"	Aircrew does not have visual contact with the target/bandit, applies to the enemy in general as well. Opposite of "TALLY."
"REFERENCE"	Descriptive call followed by crew position indicating that a crew member has the ground in sight during degraded visual landings.
"RIGHT GUN"	CC/AO/gunner occupying right window.
"RIGHT SEAT"	Aviator occupying right seat.
"RIGHT SIDE"	Descriptive call indicating that another aircraft within the flight is on the right side of the aircraft. This call will be followed by a distance in rotors to increase SA.
"ROLLOUT"	Directive call from the PNAC to roll wings level.
"TAIL GUN"	CC/AO/gunner occupying the tail position.
"TALLY (NUMBER)"	Aircrew has a visual contact with the target/bandit, applies to the enemy in general as well. Opposite of "NO JOY."
"VISUAL"	Aircrew has sight of a friendly aircraft. Applies to friendlies in general as well. When referring to wing man, include side and rotor distance, "VISUAL LEFT, THREE ROTORS." "FLIGHT VISUAL RIGHT/LEFT" indicates entire flight is on the called side. Opposite of "BLIND."
"WIRES"	Descriptive call from either crew member that wires lay within the aircraft's current flightpath. Followed by the direction/clock code and range. The PAC should attempt to cross the wires at the poles.

## 17.5 Mission Preparation.

**17.5.1 Planning.** All crew members should be involved in the mission planning process. From the time the mission is assigned, aircrew must work together to ensure the planning process works smoothly.

17.5.1.1 Smart Packs. Plan to create enough smart packs for each pilot and one additional smart pack for the enlisted aircrew of each aircraft. All smart packs should be identical.

17.5.1.2 Communications Plan. A communication plan needs to be developed by the aircraft commander. The comm plan will grow more complex based on the size of the flight and scope of the mission. The HAC must strike a balance between monitoring enough frequencies to maximize SA while not overloading the aircrews' ability to process incoming radio calls, leading to a reduction in crew SA.

**17.5.2 Briefing.** All briefings should be conducted by the flight lead/aircraft commander. It is the responsibility of everyone in the crew to obtain a proper brief. Allow a minimum of 15 minutes for a crew coordination brief utilizing the tactical aircrew brief found in the NTTP 3-22.5-CH53. As aircrew move through the tactical aircrew brief as well as the NATOPS brief,

**12.2.1 Mission.** It is the responsibility of the CH-53 mission planner to understand the true capabilities of the aircraft based on environmental conditions, actual aircraft configuration, and maintenance status. The decision to execute a mission at night should weigh the advantages of concealment from enemy observation with the disadvantages of increased risk of midair collisions and controlled flight into terrain (CFIT) and should be based on the threat situation and METT-TSL. One key to planning for nighttime operations is the early integration of Electro-optical Tactical Decision aids (EOTDA) such as target acquisition weather software (TAWS), the Solar Lunar Almanac Program (SLAP), and Joint Mission Planning System (JMPS) data.

**12.2.2 Formation Planning.** Planners must determine the size and number of elements of aircraft as well as the type of formation to be used in a night mission. Smaller elements and tighter formations are more desirable at night. The ideal formation is a section in combat cruise. This formation retains the advantages of ease of maneuver, mutual support, and reduced chance of enemy detection. METT-TSL analysis may determine the need for larger or more spread out formations. Refer to MAWTS-1 *NVD Manual*, for detailed discussion on formation considerations.

**12.2.3 Route Selection.** Table 12.1, Night Vision Device Route Selection, provides guidelines for NVD route selection.

**12.2.4 Checkpoint Selection.** See Table 12.2, Checkpoint Selection.

**Table 12.1 Night Vision Device Route Selection.**

- Avoid brightly lit areas, roads, and population centers that may degrade NVG effectiveness.
- Avoid navigational aids and airports due to hazards associated with other aviation operations and prevent detection by associated radars.
- Avoid route segments requiring heading changes in excess of 60 degrees, especially when operating with wingmen.
- Consider shadows cast by terrain (either avoiding them for safety or taking advantage of them for concealment) when transiting mountainous areas.
- Avoid route headings directly into a low rising/setting moon or sun.
- Avoid being silhouetted by the moon during approach into the objective area.
- Anticipate the presence of wires near roads, towers, and buildings in open fields. Look for easier to detect posts, poles, or stanchions associated with wires to facilitate acquisition.
- Smartpack route cards should use a large, bold font that is easy to read under the NVGs.

**OVERALL NOTE:**

\* To aid night vision device (NVD) navigation, routes should be as simple as tactically allowable.



#### **5.3.2.2. FLIR System**

Concrete and asphalt roads have a high thermal capacity enabling them to retain heat longer into the night than surrounding terrain. This produces a good thermal image. As heat is gradually dissipated below that of the surrounding terrain, the road will appear black (with white hot selected). Runways are normally seen with a FLIR system at greater ranges than with NVGs. However, if the runway happens to be cooled to the same temperature as the surrounding terrain (crossover) then NVGs may be the first sensor to acquire it. Gravel and dirt roads will cool and heat more quickly due to their increased surface area and will therefore quickly adapt to the temperature of the surrounding area making them less distinguishable with a FLIR system. Vehicular lights will be of no use to a FLIR system, but thermal signatures from vehicular activity may aid in finding a road that may otherwise be difficult to see.

#### **5.3.3. WATER**

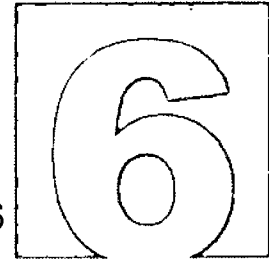
##### **5.3.3.1. NVG**

There is very little contrast between a land mass and a body of water during low light conditions. When viewed through the NVGs, lakes or rivers appear dark. As the light level increases, the reflective properties of water begin to impact the NVG image, land-water contrast increases, and reflected moonlight is easily detected. When overflying large open areas of calm water, reflections from clouds, stars, or the moon can be disorienting. NVGs may be able to display a horizon, but due to the lack of surface texture, height above water may be impossible to perceive. Due to the lack of terrain density, aircrew must rely heavily on flight instruments while flying over open water; however, when surface winds or swells exist the resulting whitecaps can provide contrast to assist in altitude and airspeed estimation. With an increased sea state, NVGs can detect texture that may aid in altitude estimation and depth perception.

##### **5.3.3.2. FLIR System**

The reflectivity and emissivity of a water surface varies greatly with change in the angle of incidence to the surface. At shallow angles, (up to five degrees) a calm water surface will reflect most radiation incident upon it. At steeper angles of 30 to 90 degrees, the water's surface will be almost entirely emissive, radiating its surface temperature. In either case, the entire FOV of a FLIR system could consist of a constant thermal scene with no detail. A FLIR system will normally view a surface at very shallow angles (0 to 11 degrees) when in level flight. Thus, on a calm night a FLIR system may not be able to produce a horizon when flying over water. As the sea state increases, the angle of incidence changes due to the crests and troughs of the waves, causing a thermal differential between the water and the surrounding terrain (normally the sky). Depending on the temperature differential and wind conditions, a thermal inversion layer normally builds over the water as the evening temperature drops. This inversion layer has been shown to mask the presence of hot objects (boats) on the water, until thermal conditions stabilize. Exact timing depends on daytime heating, cloud cover, and object characteristics, but in general, there is a temporary thermal washout in early evening as the more "reflective" objects transfer from hot to cold. NVGs may aid in target / object detection during these thermal inversion periods.

## CHAPTER 6: NIGHT VISION DEVICE AEROMEDICAL FACTORS



### 6.1. INTRODUCTION

NVD-aided operations possess significant aeromedical concerns that must be considered during mission planning and ultimate mission execution. The first consideration is that NVDs do not allow you to assume a day VFR posture for mission planning or execution. During NVD-aided operations, an electro-optical viewing device is added for acquiring the critical visually-based orientation cues and for supporting mission specific tasks (e.g., target detection, target recognition, etc.). The challenge of interpreting the NVD image must also be integrated into Terrain Clearance Tasks (TCTs), Mission Tasks (MTs), and the required crosscheck patterns necessary to safely and effectively carry out one's mission. Unlike looking through a pair of binoculars, NVGs and FLIR systems do not provide direct viewing of an object. Even though vastly superior to the performance of the human eye at night, the NVD image is still just a screen representation of the environment and does not match the performance of the human eye during the daytime. NVDs should be treated as very reliable and very accurate sensors, but as with all sensors, NVD imagery must be continually validated with an instrument crosscheck and through confirmation from other crewmembers or wingmen to ensure one's perceptions and assessments of the environment are accurate. There are many visual perceptual limitations associated with NVD use, as well as the potential for fatigue, spatial disorientation, breakdown in crew coordination, and complacency. Fortunately, many of these limitations can be addressed through proper training and detailed preflight planning and briefing.

### 6.2. AIRCREW NVD VISUAL PERFORMANCE AND CUEING

The greatest aeromedical challenge for aircrew using NVDs is to correctly interpret the image presented. This aircrew interaction with the NVD image display can be described as the interface between our visual system and the NVD (i.e., NVD-to-human interface). Aircrew rely overwhelmingly on visual information. Visual cueing provides the strongest input for maintaining spatial orientation and situational awareness. The human visual system is functionally divided into two distinct systems, the central and peripheral systems, Table 6-1.

**Table 6-1. Human Visual System**

Central Vision	Peripheral Vision
Information: What is there?	Information: Where am I?
Conscious Control	Subconscious Control
Small Field of View (2°)	Large Field of View (180°H X 140° V)
Excellent Visual Acuity (20/20)	Poor Visual Acuity (<< 20/20)
Color Vision	Shades of gray

Maintaining spatial orientation requires input from both components of the visual system, central (focal) vision and peripheral (ambient) vision. Central vision is primarily a conscious function that largely supports object recognition tasks. Peripheral vision is primarily a subconscious function that uses multiple inputs from one's spatial orientation. Maintaining spatial orientation at night requires complex conscious processing of data from various instruments and displays. The task of maintaining spatial orientation competes with the usual tasking of navigation, terrain masking, target acquisition, weapons delivery and threat avoidance. Add to this the fact that fatigue occurs more frequently at night and it is easy to understand why the incidence of spatial

disorientation in this environment appears to be magnified as variables are added. The most common contributing factors in spatial disorientation mishaps include: degraded visual environment, high task loading / saturation, reduced performance capability induced by circadian rhythm disruption or fatigue, and a fundamental breakdown in scan. Constant vigilance and a good scan pattern, both inside and outside the cockpit, must be maintained to help prevent spatial disorientation and loss of situational awareness.

Both the central and peripheral components of our visual system are impacted by NVD use. Any underlying NVD design or performance limitation that affects the quality of the image displayed will potentially impact aircrew spatial orientation, situational awareness, and overall performance. Daytime visual performance is typically used as the "gold standard" by which we compare NVD performance. We will use Table 6-1 throughout this chapter to compare and contrast NVD performance with the human visual system. As discussed in Chapter 1, the progression of I<sup>2</sup> technology has led to significant NVG performance improvements; however, we should never become complacent with the quality of the image that is presented by NVDs. As emphasized in Chapter 1, **NVDs DO NOT TURN NIGHT INTO DAY**. Since NVDs do possess some design limitations (i.e., field of view, lack of color discrimination, visual acuity, etc.), operationally-significant misperceptions and visual illusions can occur during NVD-aided operations. The challenge for aircrew remains to develop the knowledge base and training exposure necessary to completely comprehend the interaction between the technology, the night environment, and the NVD-to-human interface. The purpose of this section is to overview the primary design limitations of NVDs and their impact on aircrew performance.

#### 6.2.1. FIELD OF VIEW AND FIELD OF REGARD

One of the most obvious limitations of all NVDs is the limited instantaneous field of view (FOV) of the sensors. Table 6-2 provides a summary of some USMC NVD system FOVs. As compared to the human eye's normal FOV of approximately 180° (H) x 140° (V), the decreased FOV of NVDs is dramatic and necessitates some compensation on the part of the aircrew.

**Table 6-2. NVD Field of View and Field of Regard Specifications**

NVD	Optics Mode	FOV (degrees)	Power	FOR (degrees)
AN/AVS-9	Standard Lens	40 Circular	1x	Crew Position Limited
Night Targeting System (NTS)	Wide	24.3 H x 18.4 V	2x	Azimuth: 180 (90 Right / 90 Left) Pitch: +30 / -50
	Medium	7.2 H x 5.4 V	7x	
	Narrow	2.0 H x 1.5 V	25x	
	Narrow Zoom	1.0 H x 0.75 V	50x	
STAR SAFIRE	Wide	30 H x 22.5 V	1x	Azimuth: 360 Pitch: +30 / -120
	Medium	5.7 H x 4.3 V	6x	
	Narrow	1.4 H x 1.03 V	20x	
AN/AAQ-29	Wide	30.0 H x 40.0 V	1x	Azimuth: 180 (90 Right / 90 Left) Pitch: +20 / -45
	Medium	5.0 H x 6.7 V	6x	
	Narrow	1.3 H x 1.3 V		
AN/AAQ-27	Wide	40.0 H x 30.0 V	1x	Azimuth: +/- 210 Pitch: +40 / -140
	Medium	30.0 H x 30.0 H	1x	
	Narrow	5.0 H x 5.0 V	6x	
LITENING II	Wide	18.4 H x 24.1 V	1x	Azimuth: 360 Pitch: 360 * Except for a 40 degree half angle cone directly behind the POD.
	Medium	3.5 H x 3.5 V	5x	
	Narrow	1 H x 1 V	18x	

### **6.2.1.1. NVG**

The instantaneous FOV for the AN/AVS-9 is 40° (circular shape). This 40° FOV assumes that aircrew have optimized their NVGs for flight. NVG FOV can be less than the designed optimum if the NVG eyepiece lenses are too far away from the eyes. Conversely, bringing the NVGs closer does not increase NVG FOV but will fatigue the eyes and reduce look-under ability (e.g., reduced ability to read maps, cockpit instruments, etc.). The recommended distance between the eye and AN/AVS-9 NVG eyepiece lens, commonly referred to as eye relief, is 25 mm.

In some instances, aircrew may not be able to get the eyepiece lens close enough to provide full FOV due to helmet fit, anthropometrics, or laser or chemical/biological protection. When the NVGs are worn in conjunction with the A/P22 P-9(V) chemical, biological respirator assembly, the wearer can expect a reduced NVG FOV due to extended eye relief distance as well as a lower visual field area loss resulting from obscuration by the black portion of the faceplate and its imbedded oral-nasal mask. HMX-1 conducted an operational assessment that found the average eye relief for 10 subjects wearing the AR-5 and AN/AVS-6 NVG combination to be 32mm. The average 32mm eye relief distance found with the AR-5/NVG combination would give an intensified FOV of 39 degrees, a loss of only 2.5%. As the AN/AVS-9 and the AN/AVS-6 have the same I<sup>2</sup> tube size and near identical housing, the results hold true for the AN/AVS-9.

For NVGs, an active aggressive scan is essential to overcome the reduced instantaneous circular FOV. In addition to FOV, the term field of regard (FOR) is often used to describe the total area a crew member can scan with a given sensor (outside of the aircraft). The FOR for the AN/AVS-9 is limited by aircrew movement restraints, aircraft crew position, and aircraft structure. Ultimately, the increased scan required with NVGs must be balanced against excessive head movement as the potential for disorientation and fatigue increases with increased head movement. Limitations on excessive flight maneuvering should also be considered during night operations using NVDs.

### **6.2.1.2. FLIR Systems**

The FOV for FLIR systems varies between specific systems and system types (i.e., TFLIR vs. NAVFLIR systems). As discussed in Chapter 4, NAVFLIR systems tend to have larger FOVs and are typically boresighted to the aircraft to allow a more representative image (registry) of the environment. The ability to slew gives TFLIR systems an advantage in FOR over fixed-forward NAVFLIR systems. However, the purpose again of NAVFLIR systems is to display a properly registered image that is important for stable orienting visual cues. Excessive slewing of a TFLIR system while attempting to glean orientation cues could actually reduce aircrew situational awareness.

### **6.2.3. DEPTH PERCEPTION AND DISTANCE ESTIMATION VISUAL CUES**

In addition to FOV and aircrew visual acuity / NVD resolution factors, other visual cues are also impacted by NVDs. These visual processes are usually automatically or subconsciously managed by the visual system. Unfortunately, the loss or degradation of these cues will not be recognized unless demonstrated or a conscious effort is made to remain aware of these limitations. Ultimately, this means that normal day visual cues may not be available or could be misinterpreted when using NVDs.

#### **6.2.3.1. Depth Perception**

One common erroneous statement made by aircrew is how poor depth perception is with NVDs. In fact, depth perception is easily acquired using NVGs. However, the depth perception task is commonly confused with the more challenging distance estimation task. Whereas depth perception primarily determines the relationship of objects to each other, distance estimation relates to determining distance to an object. We utilize two types of depth perception cues, binocular and monocular.

##### **6.2.3.1.1. Binocular Cues**

The binocular factors of convergence and stereopsis are involved with depth perception. Stereopsis, the result of the disparity of images on the retina of the two eyes, is the most important factor in judging the distance of near objects. Publications disagree on the maximum practical limit of stereopsis, placing the limit from as close as 40 meters to as distant as 200 meters. With NVDs, this type of depth perception appears to be limited, with monocular cues being primarily utilized for depth perception.

##### **6.2.3.1.2. Monocular Cues**

The monocular cues to depth perception (conscious and subconscious cues learned from experience) include relative size and height, overlapping contours, distribution of light and shadow, atmospheric/aerial perspective, texture gradients, convergence of parallel lines, and, perhaps most importantly, motion parallax. Although these monocular cues provide depth perception for all distances, they become more dominant as the distance between the observer and the object in question increases. Anything that adversely impacts NVG resolution will also impact the perception of these cues. Therefore, as aircrew NVG visual acuity decreases due to lower illumination or lower contrast scenes, the cues will be less discernible resulting in poorer depth perception.

#### **6.2.3.2. Distance Estimation**

Distance estimation is significantly altered with NVGs, and objects will appear further away than they actually are. Reduction in visual acuity negatively influences distance estimation primarily because we expect objects that are less distinct in detail to be farther than ones that possess sharp detail. Another factor that degrades distance estimation is the phenomenon of minification. Minification is a decrease in the perceived size of an object in relation to the object. Dialing in too much negative diopter in the AN/AVS-9 eyepiece lens will cause minification. Minification can be a particularly noticeable phenomenon during formation flying or confined area landings. Care must be taken to maintain adequate separation from other aircraft or obstacles. Both depth perception and distance estimation are visual processes that are usually automatically and subconsciously processed by the visual system. The loss or degradation of these cues will not be recognized unless they are demonstrated or a conscious effort is made to remain aware of these limitations.

terrain where cultural lighting is generously scattered, the motion of these lights as they speed by can be detected in the periphery while looking into the NVG image. This adds to overall orientation (situational awareness) by feeding familiar information to the aircrew. When flying in canyons during periods of good illumination, features and motion may be detected in the periphery outside the NVG FOV. When peripheral cueing is added to both the NVG and FLIR image, a good marriage of sensor and real world imagery can result in significantly enhanced spatial orientation.

#### **6.2.7. POST-FLIGHT VISUAL PROBLEMS**

Some temporary visual changes can occur after NVG use. To date, there is no evidence of any permanent changes to vision, and experience indicates that there are none. The reductions in contrast, resolution, and FOV all contribute to visual fatigue. Improper adjustment of IPD will also contribute to eye fatigue and headaches.

##### **6.2.7.1. Color Sensitivity**

Because of the green monochromatic NVG display, the green sensitive cones may become overwhelmed leading to temporary orange to brown afterimages upon NVG removal. This condition does not pose a hazard although color discrimination may be temporarily skewed.

##### **6.2.7.2. Near Depth Perception**

As discussed earlier, post-flight loss of near depth perception may result due to improper NVG IPD adjustment. This forces the eyes to converge or diverge, which in turn can cause errors in binocular viewing and therefore, near depth perception. Far depth perception, a function of monocular cues, is not affected by extended NVG use. NAWC Warminster found that the return of near depth perception could be in as little as one hour. The proper adjustment of IPD will reduce or eliminate this problem.

#### **6.3. FATIGUE**

Fatigue has always been a factor in night operations. NVG-aided missions can be extremely demanding with the potential for inducing acute, cumulative, and circadian fatigue. The effects of fatigue can be mitigated, but only at the expense of increased physiological and psychological effort from the aircrew. This increased effort may add to the problem and lead to the feeling of being burned out. Of greatest concern is the reduction in performance caused by fatigue. Because of the potential impact on mission accomplishment, fatigue will be discussed in detail. Fatigue has always been a problem in aviation, however, night operations introduce additional stress and physical limitations that make fatigue an even more insidious threat. Many things can cause fatigue, such as excessive flying, self-regulated crash diets, missed meals, task saturation, hypoglycemia, dehydration, and recent illness or sleep loss. There are three types of fatigue: (a) acute fatigue, (b) cumulative fatigue, and (c) circadian fatigue.

##### **6.3.1. ACUTE FATIGUE**

Acute fatigue is intense exhaustion felt because of the natural build-up of muscular metabolic wastes. This can be the result of intense physical exertion, a demanding flight, or a long workday. Acute fatigue is short-term, is characterized by a feeling of being worn out, and will usually be relieved by a single night's rest.



### **6.3.2. CUMULATIVE FATIGUE**

Cumulative fatigue is less intense than acute fatigue and is characterized as an accumulation of fatigue over time, usually days or even weeks. This can be the result of extended workweeks with little time off or failing to obtain adequate sleep (short duration or poor quality). Cumulative fatigue is associated with a feeling of being burned out. It takes the body longer than one night's rest to recover normal energy levels. Studies indicate that cumulative fatigue results in an exponential increase in performance errors. For the NVD-aided operations, cumulative fatigue means that the second night of a cycle can be more tiring than the first, and by the end of the cycle, fatigue can be very obvious.

### **6.3.3. CIRCADIAN FATIGUE**

The human body and its physiological functions are strongly controlled by a biological clock. This biological clock, or circadian rhythm, describes the approximate 24-hour cycle or rhythm that drives many physiological functions that are highly correlated with numerous human performance parameters. The word circadian comes from the Latin "circa dies" which means "about days." Circadian rhythm should not be confused with the discredited biorhythm theory. That theory touted the ability to pinpoint productive and nonproductive days based on the interaction of physical, emotional, and intellectual cycles set into motion on an individual's date of birth. Circadian rhythm problems associated with night flight operations were experienced by German Luftwaffe night fighter pilots in WWII and again by night fliers in Vietnam. As so often happens, the importance of information derived from experience is lost when the world returns to a somewhat normal state. The far-reaching effects of the night mission on many aviation communities has brought back the hard reality of dealing with performance over extended periods of night operations.

#### **6.3.3.1. Circadian Fatigue Research**

A great deal of research has been conducted on circadian rhythms in connection with the space program. At least 50 different bodily functions such as body temperature, hormonal levels, and performance have been directly related to the circadian rhythm. Research indicates that circadian rhythms are tailored to each individual and are entrained, that is dragged along or activated, by as many as 40 different environmental factors. These factors include the dark-light cycle and to a surprisingly strong degree, normal social interaction, especially meal times. The daily events that affect and help to trigger circadian rhythms are referred to as "zeitgebers" (literally translated as time givers). It is as though the human body is an imprecise watch that needs constant resetting by the zeitgebers. It appears that the body is designed to run longer than the typical 24-hour day because studies and experience show that when isolated from normal environmental cues, individuals usually function on at least a 25-hour cycle. The shifting of daily sleep / work schedules may induce circadian fatigue (circadian disruption or desynchronization) and is associated with the body's underlying natural performance lows and related phase shift problems.

NVD-aided missions can combine all three types of fatigue and can potentially present a significant problem. One's normal squadron routine combined with the workload of the night NVD-aided mission creates acute fatigue on a daily basis. Shifting into a night training period causes circadian disruption. Add to this the layering effect of cumulative fatigue over time and it is clear that aircrew must understand how to deal with fatigue. The cumulative effect of fatigue means that the second night of a training period can be more tiring than the first night and as the training period progresses the effects can become significant. The effects of cumulative fatigue and circadian disruption magnify the effects of normal acute fatigue. One factor associated with circadian disruption is disturbance of the sleep cycle. Because of their impact

#### **6.3.4. SYMPTOMS OF FATIGUE**

Fatigue, especially cumulative fatigue associated with circadian disruption and sleep deprivation, poses a serious threat to night NVD-aided mission accomplishment. Many experts believe that performance will degrade anytime the circadian rhythm is disrupted. Many manufacturers recognize this and slow the assembly line during the second half of the late shift to compensate for reduced performance. The accidents at Three Mile Island, Chernobyl, and Bhopal all occurred during the graveyard shift. In many ways, fatigue is very similar to hypoxia. It subtly erodes performance, is difficult to recognize, and fosters an unwillingness to do anything about it. Above and beyond explicit yawning, heads dropping, or aircrew unknowingly taking "micro-naps," the following symptoms of fatigue may alert crew members to the alert status of one another. Tracking the complacency, computational performance, communications exchanges, irrational decisions, and irritability ( $C^3I^2$ ) of crew members will give great insight to the effects of fatigue on aircrew performance.

##### **6.3.4.1. Complacency**

Complacency allows for acceptance of situations that would normally not be permitted, especially in the context of night NVD-aided missions. Attention span and vigilance are reduced, important elements in a task series are overlooked, and scanning patterns that are essential for situational awareness break down usually due to fixation on a single instrument, object, or task. Critical but routine tasks are often skipped because fatigue reduces overall willingness to respond.

##### **6.3.4.2. Computational Performance**

Computational skills become degraded. The most difficult tasks for a fatigued aviator are those that require complex thought, swift decision, or planning. Fatigue typically results in errors caused by omission of a task as opposed to performing a task incorrectly. Uninteresting or complex tasks are more seriously affected by fatigue than interesting or simple tasks.

##### **6.3.4.3. Communications**

Short-term memory is significantly impaired by fatigue. This can result in neglecting to make appropriate calls or not responding to calls affecting communications, crew resource management (CRM), and mission accomplishment. Communications from a fatigued aviator often trail-off and there are a lot of "uhs." There is a tendency to inaccurately restructure conversations and the individual tends to hear what he expects to hear as opposed to what is actually transmitted. The desire to initiate action decreases with fatigue, including interactions with other people.

##### **6.3.4.4. Irrational Decisions**

The ability to assimilate information and form a rational solution is significantly degraded when fatigued. Decisions made when fatigued may be different than decisions a well-rested aviator would make in the same situation.

##### **6.3.4.5. Irritability**

Fatigue makes people more irritable and less tolerant of others. This can significantly degrade crew communication and coordination, both of which are critical for successful night systems mission accomplishment.

### **6.3.5. SLEEP**

The primary cure for fatigue is sleep. The biological function of sleep is not completely understood but it acts in some sort of restorative manner. The sleep cycle affects many bodily functions that are timed throughout the day. If sleep schedules are disrupted, the cycles of body temperature and performance are also disrupted. Interestingly, there is no chemical or physiological difference between tired and rested aircrew that are on the same cycle. The brain appears to be the real driving force for the need to sleep and the subsequent source of sleep deprivation effects. Boredom can induce sleep in the same manner that motivation can delay the effects of fatigue or sleep. Neurological research has shown that sleep is not passive unconsciousness, but rather a very intense physical activity of great complexity. There are various stages of sleep and although everyone has their own distinctive sleep behavior, sleep does have a classic pattern. An average person spends about 40% of their sleep in the rapid eye movement (REM) stage. This stage has long been thought to be the essential portion of sleep, and without it, fatigue would quickly result. Other research indicates that this is not always true. Shifting to a night routine can cause problems over time. The individual may be able to satisfy sleep requirements with less sleep and maintain good efficiency by napping for short periods, however, the sleep account will eventually be overdrawn and the balance will have to be restored with at least one very long sleep to prevent cumulative fatigue.

### **6.3.6. RECOMMENDATIONS FOR COPING WITH FATIGUE**

NVD-aided missions may combine acute, cumulative, and circadian fatigue. At the same time, NVD-aided missions demand maximum aircrew performance. As stated earlier, some aircrew will not be able to fully adjust to the night routine, especially if the transition is poorly handled by the squadron or by the individual. There are means to reduce the impact of fatigue and thereby improve performance and increase safety. The following recommendations are based on studies conducted by the Naval Health Research Center, the USAF School of Aerospace Medicine Crew Performance Laboratory, the Henry Ford Hospital Sleep Disorders Laboratory, and experience from USMC, USN, and USAF squadrons. These recommendations have been shown to reduce the effects of fatigue. It must be understood that any feasible night operations schedule will probably be a blend of these recommendations and operational requirements.

#### **6.3.6.1. Understand the Aeromedical Challenge**

Studies and experience indicate that task familiarity and motivation can overcome or delay the effects of fatigue. However, fatigue will eventually take its toll as performance will drop under these conditions of additional effort. Understanding that there is a natural low in daily performance, and making an extra effort, appear to be the best means to compensate for fatigue. Extra effort in this case means being alert to the causes and effects of fatigue, and not pushing aircrew after an already long day.

#### **6.3.6.2. Crew Day / Crew Rest**

Enforce a maximum workday for aircrew on a night operations schedule, including flying and non-flying duties. This is because cumulative fatigue magnifies the effects of acute fatigue. Long workdays may not be a problem for a few days, but will eventually catch up with aircrew. Allowing for twelve hours of off-duty time after aircrew leave the squadron (not after landing) has been shown to be very effective and is usually workable. There is a definite wind down time involved with night missions. It normally takes 3 hours before most aircrew can sleep after a rigorous night aided mission. Keeping aircrew on a night cycle for extended periods (at least two weeks) is better than rapidly switching aircrew between night and day schedules (day-night-night-day-day, etc.).

#### **6.3.6.13. Alcohol**

Alcohol can influence the quality of sleep. While it can help a person wind down and lull one into deep sleep, it has a detrimental effect on sleep quality and can prevent the restful sleep that is really needed. Alcohol disrupts the sleep cycle changing the amount of time spent in the various stages of sleep. Without the right amount of each stage of sleep, we do not wake up well-rested.

#### **6.3.6.14. Time Management**

Aircrew must manage their time efficiently and prioritize their efforts. Department head or higher positions cannot be afraid to delegate to subordinates. Fulfill ground job requirements prior to the night training period so that the majority of effort during this period can be placed on flying.

#### **6.3.6.15. Cancellation**

If feeling tired or burned out prior to a flight, it is highly probable that the individual is fatigued and will experience degraded performance during the mission. This brings up one of the more important yet most difficult recommendations to implement: CANCELLATION. For whatever reason, if an aviator honestly feels too fatigued to successfully accomplish the mission, he should cancel the flight. This is obviously easier to say than to do. To make canceling a viable option, it must be implemented through a combination of aircrew education and highly visible support by Squadron / Group / Wing unit commanders, operations officers, and senior aircrew. To train the way we fight, it is necessary for night aircrew to confront the night environment with its accompanying fatigue and sleep disruption. All aircrew must take the appropriate steps to minimize fatigue and be able to recognize the effects of fatigue on performance. The judgment needed to effectively deal with intermittent night operations demands a mature attitude. The ability to weigh operational commitments against realistic conditions is crucial to the successful completion of the night NVD-aided mission in a safe and effective manner.

### **6.4. CREW COORDINATION**

The high demands of the night NVD-aided mission require good crew coordination, not only between aircrew, but also with other aircraft in the flight and with controlling agencies. Degraded crew coordination during a critical phase of the mission can lead to poor performance and the increased chance of a mishap. For this reason, night systems briefs must be very thorough and cover many topics that may not be discussed during most briefs (e.g. moon angle, lux level, absolute humidity, etc.). It is not the intent of this manual to dictate crew coordination procedures, but the subject is mentioned here for completeness and to highlight the need to fully investigate the crew coordination issues peculiar to the night systems environment.

### **6.5. COMPLACENCY AND OVERCONFIDENCE**

**NVDs DO NOT TURN NIGHT INTO DAY.** However, after initial NVD flying experience and some flights in low illumination conditions, there is a natural tendency to be overly comfortable when flying in high illumination conditions. Another potential area of complacency and overconfidence is returning to day low altitude flights after a night training period. Because of the significant increase in visual cues and the efficient scan developed, there is a tendency to be overly comfortable in the low altitude arena. While there is an increase in skill level, the complacent mindset could be a setup for a mishap.

#### **12.2.2.2. Airborne**

Inflight goggling is an acceptable method to use when goggling the flight on the deck is impractical or not environmentally suited (e.g., inflight transition from day to night). Goggling or degoggling in flight requires good crew coordination within each cockpit and between each aircraft. The flight leader must ensure that the sequence has been thoroughly planned, properly briefed, and understood by all flight and crew members.

##### **12.2.2.2.1. Goggle**

Goggling will commence at a pre-briefed geographical point, time, or on cue with a visual signal or radio call. Whatever the case, all crews must be aware that goggling is taking place. Aircrews should have NVGs donned in the stowed position well before light levels mandate their use. As the light level decreases, aircrew should periodically rotate their NVGs down to check ambient conditions. When the benefits of aided flight outweigh those of unaided, the flight should goggle up according to the preflight brief. Goggling within each aircraft should be done with one PAC and one crew chief / aerial observer clearing the aircraft while the other pilot and crew chief / aerial observer adjust the interior / exterior lighting and goggle. Once these crewmembers are goggled, controls will be transferred to the goggled pilot and the remaining crew members will goggle.

##### **12.2.2.2.2. Degoggle**

The procedures for degoggling should be the same as those for goggling, with the exception that internal lighting must be changed from the NVG compatible lighting to the appropriate night unaided cockpit lighting. This lighting transition should not occur until all aircrew have degoggled.

### **12.3. NVG FORMATION FLIGHT**

This section will focus on the peculiar considerations for conducting formation flights using NVGs, and considerations provided to facilitate safe and effective mission accomplishment, both in training and combat.

#### **12.3.1. INITIAL NVG FORMATION TRAINING**

Introducing a pilot to flying in formation while wearing night vision goggles requires some special considerations due to limited FOV and poor distance estimation with the NVGs. This discussion is intended to aid the instructor and student by giving some basic points associated with flying formation on NVGs. As with all other aspects of training, the building block approach should be taken.

##### **12.3.1.1. Procedures**

A 20 to 30° bearing will allow the pilot to see both the lead aircraft and the terrain in his flight path within the NVG FOV, thereby reducing scan requirements and increasing scan efficiency. By flying more acute than a 30° bearing, the pilot must exercise a vigilant scan forward to perceive obstacles in the route of flight and then back to the lead aircraft by using sound mission cross-check times.

##### **12.3.1.2. Technique**

Techniques for formation flight using NVGs are similar to those during the day. However, lateral separation may be difficult to perceive. If the threat and tactics allow, consideration should be given to flying a position where the pilot can see a clear picture of the lead aircraft so that he can best pick up cues for aircraft attitude, altitude, airspeed and relative motion. This will be greatly affected by ambient illumination and atmospheric restrictions to visibility.

### **12.3.1.3. Common Errors**

12.3.1.3.1. Inconsistent Lateral Separation – Not holding a constant lateral separation. This creates an accordion effect within the formation.

12.3.1.3.2. Excessive Step-up – Flying with too much step-up.

### **12.3.2. MANEUVER ELEMENT**

The best maneuver element (as in day operations) is the smallest element capable of accomplishing the mission. The basic element of any formation is the section, whose inherent advantages of ease of maneuver and mutual support are retained on NVGs. METT-T factors may warrant the use of division size elements (or larger) when conducting NVG-aided operations. Whether operating as a section or a division while using NVGs, the joining of those flight elements is demanding, especially during the critical objective phase of a mission. Procedures for joining must be thoroughly planned. In addition to those already presented, the following considerations should be taken into account when selecting the size of an element to be flown:

#### **12.3.2.1. Ease of Detection**

Properly planned and executed, the conduct of flight in a low-level environment under the cover of darkness significantly reduces the enemy's visual acquisition capabilities. The probability of electronic acquisition increases as the size of a flight increases. Flights in a potentially contested area must be protected in the planning stages by the Intelligence Preparation of the Battlespace (IPB) process, as well as minimizing the radar and acoustic signature of our assets by reduced numbers and by flying well planned routes.

#### **12.3.2.2. Dispersion Capability**

Most assault support missions should be planned to go where the enemy is not. However, in preparing for the worst, the flight must possess the flexibility and maneuverability to evade an unforeseen threat and continue the mission. In terms of section vs. division tactics, a "scatter plan" is more easily executed with the smaller element. When forced to operate in a larger formation, the "scatter plans" must be developed in terms of direction of the attack, range of the threat, and nature of the threat (i.e., small arms, rockets, AAA, SAM, aerial threat, etc.). Planning must include those actions to be taken by assault aircraft and those actions to be taken by escorts. Maneuvers must be planned in terms of different aircraft positions in the flight and the position of the flight in terms of terrain. Likewise, execution of the maneuvers must be planned with respect to the limitations of the NVGs. Emphasize the requirement for simplicity in coordination of the flight and smooth individual execution to avoid vertigo and disorientation. Finally, the plan must be completely understood by all members of the flight.

#### **12.3.2.3. Mutual Support**

Mutual support is especially important in multiple aircraft NVG-aided operations. Lookout doctrine, placed alongside the demands imposed by the NVG's FOV, can overwhelm poorly prepared or coordinated aircrew members. The additional cues provided by additional aircrew could be most beneficial in identifying a checkpoint, an obstacle, or the enemy. NVG-aided operations over water are enhanced by the mutual support afforded by aircraft formations. Experience has shown that due to the limited contrast available when flying over a smooth water surface (low contrast NVG visual scene), pilots have difficulty perceiving a gradual loss of altitude. Aircrew coordination should be used to complement inter-plane communication in formation flights.



### **12.3.3. TACTICAL FORMATIONS ON NVGS**

The same cruise principles of using radius of turn to maintain or regain position apply to NVG-aided operations. However, pilots must understand that NVG limitations dictate a more conservative approach regarding closure rates. In low ambient light conditions, a wingman should always stay close enough to the lead aircraft to recognize any attitude, altitude, or airspeed changes. Greater distances reduce visual cues needed to effectively maintain position in the flight.

#### **12.3.3.1. High Light Level Considerations**

Tactical formation flights conducted under high light level (HLL) conditions with favorable atmospheric conditions differ little from daylight formations due to the excellent visual acuity and depth perception provided by the AN/AVS-9 NVGs under these illumination conditions. Tactical (TAC) turns can be performed, but should be preceded by a thorough execution brief. Aircrew must continue to exercise diligent scanning techniques to ensure the safe conduct of NVG-aided operations and use complimentary aircraft systems to assist in validating distances between aircraft (e.g., Air-to-Air TACAN, radar, etc.).

#### **12.3.3.2. Low Light Level Considerations**

The low light level (LLL) flight regime is the most demanding environment to operate in. It requires detailed briefing, excellent crew coordination, and a vigilant scan. Lack of visual cues, decreased depth perception, and poor external lighting require reduced separation between aircraft (tighter formations) to adequately maintain sight of lead. Under low ambient light conditions and when atmospheric conditions deteriorate, wingmen should decrease lateral separation to stay close enough to the lead aircraft to recognize any attitude, altitude, or airspeed changes. TAC turns are not recommended under these conditions.

#### **12.3.3.3. Combat Cruise**

This formation is designed for both HLL and LLL conditions. The same cruise principles of using radius of turn to maintain or regain position apply to NVG-aided flight. However, pilots must understand that NVG limitations dictate a more conservative approach regarding closure rates. Greater lateral distances reduce visual cues needed to effectively maintain position in flight.

##### **12.3.3.3.1. Bearing**

The optimum position for a wingman is between the 20° to 30° bearing (5 to 7 o'clock). The 20° bearing is preferred for extended navigation legs. This position also keeps the lead aircraft within the NVG's FOV to allow for greater forward situational awareness. Though Combat Cruise allows wingmen the flexibility to fly 10° forward of abeam on either side of the lead aircraft, wingmen positioned forward of the 30° bearing will reduce overall flight maneuverability. Wingmen should avoid prolonged periods of flight in the 6 o'clock position due to the degradation of most cues required for attitude, altitude, airspeed, and closure rate assessment. Additionally, general position keeping is challenging in this position.

##### **12.3.3.3.2. Lateral Separation**

Since visual cues are reduced, lateral separation between aircraft may need to be reduced as well. The optimum lateral separation is defined by your community specific ANTPs. Increased light levels may allow for greater distances between aircraft, however, lower light levels may require tighter formations. Consideration should be given to employing the "welded wing" concept (remain in fixed position) during extended portions of flight, like straight leg portions of a navigation route.

#### **12.3.3.3.3. Step-up**

Wingmen flying in close proximity to the lead (200 feet or less) or when experiencing poor visual acuity from reduced light levels should fly with 10 feet of step-up. When the situation dictates, wingmen have the option to fly a level altitude or step-down. Step-down is particularly useful in areas where lead or other flight members may become lost in the background, such as in the urban environment. If flying a stepped-down position, caution should be taken to ensure that the wingman maintains separation from terrain and other ground obstacles.

#### **12.3.3.4. Spread**

NVG-aided flights conducted in a spread formation will result in the PAC constantly shifting their scan between the lead aircraft and their direction of travel. The inflexibility that inherently accompanies operations in spread will most often make it less desirable than combat cruise. This is particularly true when realizing that most of the advantages from flying in spread can also be achieved in cruise formation. LLL spread formation is not recommended. Inflexibility, coupled with a demanding scan pattern and poor frontal situational awareness, make this formation undesirable under these environmental conditions.

#### **12.3.3.5. Aircraft Lighting**

As discussed in Chapter 3, NVG-aided operations require modification of the standard lighting configuration used in night flight. For instance, besides being disorienting for pilots during the landing transition, use of anti-collision lights within a formation can be distracting to the point of being unsafe to others in the formation. Standard position lights, when placed too bright, are also distracting. Aircraft capable of dimming these lights should do so in accordance with unit SOPs or as dictated by the comfort level of your wingman.

#### **<<NOTE>>**

If a wingman is uncomfortable with a particular light scheme, a request should be made to change the lighting configuration.

Formation and blade tip lights are also adjustable on many aircraft and should be adjusted as required. While the tail position light is an effective signaling device, using it as a matter of course is not recommended as this configuration may set-up the wingman for perceptual autokinesis and its associated hazards. In a tactical scenario, any consideration of lighting must be balanced against the enemy's capability to detect it. To respond to this need, IR lighting was developed that is invisible to the unaided eye. Until that lighting is fully integrated, we must not lose sight of the fact that safety-of-flight considerations in training should not be ignored in combat. If we run into each other due to a lack of NVG compatible and / or IR covert lighting to avoid the enemy's detection, we have accomplished the enemy's objective. Consideration must also be given to enemy forces that potentially possess NVD technologies. Regardless of how rudimentary that NVD capability is deemed, it still must be considered during mission planning and the impact on aircraft lighting plans must be addressed.

### **12.3.4. SECTION MANEUVERING ON NVGS**

Section maneuvers are designed for the effective, efficient movement of the flight. However, before executing these on NVGs, you should carefully consider the ambient light level, the severity of the maneuvers to be executed and the crew coordination required.

#### **12.3.4.1. Ambient Light Levels**

Ambient light levels must be high enough to meet the requirements for adequate lateral separation. The key is to attain safe enough separation to comfortably execute the maneuvers without losing sight of sufficient formation flight cues. Before leaving a discussion of ambient light levels versus lateral separation, a warning regarding operations in proximity to lighted areas is needed. Lights several miles away from a flight or a low angle moon may impair a wingman attempting to track his lead's lights against the background lights. The greater the lateral separation, the more easily lead's lights are lost. Such a condition will require a flight to close-up the formation until respective aircraft silhouettes are clearly defined. A technique to breakout lead's silhouette may be to set up a "step-down" position on lead to place him higher on the skyline. This would be possible only with sufficient altitude to ensure the wingman's safe clearance in his new step-down position. Another option might be to execute a cross-over, to place the wingman between the lead and the lighted area or the moon.

#### **12.3.4.2. Angle of Bank / Severity of Maneuver**

Due to a potential for disorientation while using NVGs, rapid execution of large angles of bank is not recommended. NVG-aided maneuvers should be smooth, measured, and coordinated to reduce the chance of inducing spatial disorientation or vertigo.

#### **12.3.4.3. Aircrew Coordination**

Clear communication of terms must be addressed. Aircrew should give continuous updates on the wingman's position.

### **12.3.5. SEPARATION OF AIRCRAFT**

Ultimately, it is the mission commander / flight leader's judgment that will determine flight separation. It should be based on several considerations to include:

#### **12.3.5.1. Ambient Lighting**

Ambient lighting as well as the atmospheric conditions that affect visibility may determine separation and numbers of aircraft in a flight. The ability for the wingman to perceive closure rates and relative motion of the lead must be considered as well.

#### **12.3.5.2. Aircraft Lighting**

The two primary considerations for planning NVG exterior lighting configurations should be: (a) how well aircraft in the flight can detect one another and (b) how easily the flight can be detected by aircraft or threats external to the flight. CNO policy for aircraft external lighting is delineated in the OPNAV 3710.7 series manual. CMC policy for USMC aircraft lighting is delineated in the Marine Corps Aviation Training and Readiness (T & R) Program Manual and is summarized in Chapter 3 of this manual. Any time separation between aircraft within a flight gets extended or if a wingman perceives an unsafe situation developing, a traffic call or a call for anti-collision lights must be made on the radio. During LLL conditions, use of the IR searchlight or landing light to identify aircraft position is also recommended.

## **12.8. NVG LOW LIGHT LEVEL OPERATING CONSIDERATIONS**

To take full advantage of the night environment, the AN/AVS-9 NVGs have been designed to perform under low light level (LLL) illumination conditions, below 0.0022 lux. Through proper training and understanding of the capabilities and limitations of the NVGs in reduced ambient light conditions, aircrew can safely conduct night operations under LLL conditions. This section is intended to provide aircrew information on the peculiarities of NVG use under LLL conditions.

### **12.8.1. NVG PERFORMANCE**

NVG performance in conditions of low ambient illumination is characterized by decreased resolution, visual acuity, contrast, and hazard detection range. Low ambient illumination also creates an increase in the "blooming" effect from artificial illumination sources (e.g., aircraft lighting, muzzle flashes, rocket, tracers, flares, and cultural lighting). The decreased resolution, visual acuity, contrast, and hazard detection ranges are a result of the small amount of light (photons) available to strike the photocathode. Since the photocathode is not completely saturated by light, the image at the eyepiece lens has "video noise" commonly referred to as "scintillation" or "graininess." This situation is similar to television reception with a weak signal. The picture quality is poor and will remain so until the signal becomes stronger. Signal strength is a function of illumination with a stronger signal occurring with higher light levels.

Under LLL conditions, the combination of incompatible lights and the NVG I<sup>2</sup> tube's Automatic Brightness Control (ABC) circuit results in an increase in the NVG blooming and shutdown effects. The ABC circuit, which controls the I<sup>2</sup> tube gain, attempts to maintain constant output brightness at the eyepiece lens. The functioning of the ABC circuit is explained in greater detail in Chapter 3. Under LLL conditions, the ABC is at maximum gain. When a light source enters the NVG FOV, the light appears extremely bright with a significant halo effect. If the light source is bright enough, as with a flare, both the NVG's Bright Source Protection (BSP) and ABC will be activated to reduce system gain. The resultant decreased gain makes it more difficult to see the surrounding terrain features. The NVG image nuances are not necessarily unique to NVG performance below 0.0022 lux. However, these effects become much more significant in determining NVG performance under LLL conditions than they do under HLL conditions. Mission planning should reflect this phenomenon.

### **12.8.2. AIRCRAFT LIGHTING**

Under LLL conditions, the NVGs operate at maximum gain levels. Aircraft lighting configurations become very important in these lower light conditions due to the increased blooming effect created by the increased gain.

#### **12.8.2.1. Interior Aircraft Lighting**

The 665 nm cut-off filter incorporated in the AN/AVS-9 F4949R and F4949R-T NVG in conjunction with the NAWC/AD approved cockpit lighting configuration has alleviated the windscreen glare that was associated with earlier NVGs. However, due to the increased gain of the AN/AVS-9 in low light level conditions, even the smallest escape of unfiltered light in the cockpit will have a negative (blooming) effect on the NVGs either directly or through windscreen glare. It is important that all cockpit lighting filters and covers fit properly and that all instrument and console lights are adjusted properly to achieve maximum performance from the NVGs.

#### **12.8.3.1.2. Altitude**

Factors that need to be considered are: (a) higher altitudes will reduce visual acuity but may also reduce the number of obstacles along the route of flight, and (b) lower altitudes will allow for better visual acuity and in most cases better hazard detection. However, hazard avoidance reaction time is reduced.

#### **12.8.3.1.3. Airspeed**

Slower airspeeds and a more vigilant scan are required to increase reaction time. This allows pilots more time to detect and react to obstacles, targets, and terrain features.

#### **12.8.3.2. Approaches / Landings**

Obstacles and reference points may not be as apparent while approaching or in the LZ due to reduced visibility in low light conditions. The pilots ability to determine closure rate is also affected. Therefore, a more vigilant scan by all crewmembers and sound crew coordination is a necessity. Consideration may be given to utilizing the IR searchlights on final approach to the LZ. This may help in illuminating obstacles and selecting hover reference points provided the zone is not too dusty. Another significant consideration is the crewmembers' ability to accurately judge altitude during the landing transition. In some instances, it maybe necessary to call altitudes from the radar altimeter until well below 50 feet. Below 25 feet, the crew chiefs or aerial observers will be able to judge altitude with greater accuracy.

Pilots should consider selecting larger landing zones as ambient light conditions decrease. Two other factors to consider are shadowing in zones surrounded by trees and the effects of dust in zones created by loose packed soil or sand.

##### **12.8.3.2.1. Shadowing**

A clearing in trees will appear darker since there is a limited amount of ambient light from directly overhead. The shadowing effect is created by the trees blocking ambient light other than that from overhead. Shadowing can also mask an object that fall in a shadow. Use of the IR searchlight in this condition may be helpful.

##### **12.8.3.2.2. Dust**

Dust circulating through the rotor system tends to cause brown-out or at least restricted visibility. This is exacerbated in low light conditions with visibility already restricted. Utilizing an IR searchlight in these conditions only tends to amplify the brown-out condition. Another phenomena associated with a dusty LZ is the "sparkle" effect. This is created by static discharge from the rotor system reacting with the dust and / or sand particles. It is amplified when gain on the NVGs is increased and can have the same degrading effect as artificial illumination in the NVG FOV.

##### **12.8.3.3. Formation**

Pilots must reduce aircraft separation in their formation to acquire the visual cues necessary to maintain position in formation. This is especially important when flights are being escorted. Selection of exterior aircraft lighting configuration and intensities is very important to maintain visual cues by minimizing the NVG halo effect. Lastly, the lead must fly the most stable platform as possible and avoid abrupt maneuvering.

#### **12.8.3.7.5. Target Detection**

Target detection ranges will be significantly reduced and weapon effects will be more pronounced.

#### **12.8.3.7.6. Routes**

Checkpoints for navigation routes should be very prominent and if possible closer together. Further, IP selection distance from LZ / objective is critical to prevent disorientation under LLL conditions.

### **12.9. NVG CREW COORDINATION**

Survival in a threat environment as well as a training environment depends largely on how well each crew member understands their portion of the mission and how they perform their specific crew functions. The "Tactical Aircrew Considerations and Responsibilities" academic support package published by MAWTS-1 is a detailed discussion of helicopter crew coordination and a "must read" item for all aircrew. Crew coordination is more critical while operating on NVGs than in any other flight environment. Due to the limited peripheral vision, degraded depth perception, and the 40° field of view associated with NVGs, aircrew lookout doctrine must be briefed for all phases of the flight and strictly followed by all crew members. Each member of the crew must understand and comply with the briefed goggle / degoggle procedures and the NVG related emergency procedures. It is imperative that the aircraft commander be advised any time a crewmember's night vision capability has been degraded. NVG specific crew responsibilities are as follows:

#### **12.9.1. PILOT-AT-THE-CONTROLS**

The pilot-at-the-controls (PAC), as in TERF, DM, and DACM / ACM, is primarily responsible for avoiding obstacles and maintaining control of the aircraft. The PAC should assist the PNAC in navigation by calling recognizable terrain and manmade features. During the landing phase, the PAC should keep all crewmembers apprised of references in the landing zone and comply with briefed inadvertent IMC procedures during landing should those references be lost. Aircraft status and intentions should be communicated to other aircraft in the flight as applicable. The PAC's primary emphasis and attention must be devoted outside the aircraft during NVG-aided operations. When possible the PAC should avoid distractions inside the aircraft and allow the PNAC to manipulate cockpit switchology and frequency changes.

#### **12.9.2. PILOT-NOT-AT-THE-CONTROLS**

The pilot-not-at-the-controls (PNAC) is responsible for navigation, avoiding obstacles, and directing the PAC as required to keep the aircraft on course. The PNAC will also back up the PAC on altitude and airspeed along the route of flight. During the landing phase the PNAC will assist by monitoring rate of closure, descent, altitude, and aircraft drift over the intended point of landing. The PNAC will make altitude calls from the radar altimeter to a pre-briefed altitude, at which time the crew chief / aerial observer will take over in multi-crew aircraft. Should the aircraft encounter IMC or wave-off criteria during the landing transition, the PNAC will provide information regarding rate of climb, aircraft attitude, airspeed, altitude, and engine performance during the wave-off or until VMC. The PNAC should be prepared to assume control of the aircraft at any time. The PNAC should handle all switchology (when possible and applicable), thus allowing the PAC to concentrate solely on aircraft control.



### **12.9.3. CREW CHIEF**

The crew chief will keep the pilots informed as to the location of other aircraft in the flight and comply with established lookout doctrine. The crew chief will assist the PNAC by monitoring the mechanical functions of the aircraft as required and reporting prominent terrain and manmade features along the route of flight for navigation purposes. During the landing phase, the crew chief will keep the pilots apprised of obstacles in the landing zone and monitor aircraft drift over the intended point of landing. The crew chief will take over altitude calls from the PNAC at a pre-briefed altitude and continue them until the aircraft has touched down. Generally speaking, due to the crew chief's position in the aircraft and ability to look straight down at the ground, the crew chief may be able to keep sight of ground references even though pilots have lost theirs. If this situation occurs, the crew chief should continue to advise the pilots of drift, altitude, and aircraft attitude throughout the wave-off. Should the crew chief lose sight of ground references, the crew chief must pass that information to the pilots immediately.

### **12.9.4. AERIAL OBSERVERS / GUNNERS**

The aerial observer / gunner will assist the PNAC by reporting all geographical and manmade features along the route of flight and maintain lookout doctrine. During the landing phase, aerial observer / gunner will assist the crew chief in obstacle identification, monitoring aircraft drift, and maintaining a reference point on the ground.

### **12.9.5. SUMMARY**

Positive crew coordination is crucial to mission success. Pilots of all aircraft in the flight should back-up the lead aircraft's navigation. If the lead aircraft appears disoriented there should be no hesitation by any pilot in the flight to reorient the flight, either through pre-briefed visual signals or via radio communications.

## **12.10. NVG-AIDED WEAPONS EMPLOYMENT**

The same conditions that degrade the enemy's ability to acquire our forces will also likely impede our ability to acquire and engage him. All helicopter armament systems can be employed while conducting NVG-aided operations; however, some will be employed more effectively than others. This section will examine proven techniques for individual weapon systems employment.

### **12.10.1. ACQUISITION RANGE**

The first step in delivering ordnance is target acquisition and identification. NVG visual acuity, even under the most ideal conditions, allows for acquisition ranges well below those enjoyed during daylight operations. Acquisition ranges will also decrease as light levels decrease. These acquisition ranges are usually well within the enemy's weapons engagement parameters but his visual and optical detection capabilities will also be limited at night. As a general guideline, acquisition ranges under a clear sky and quarter moon illumination conditions are as follows:

#### **12.10.1.1. Vehicular Targets**

Vehicular targets and other large stationary objects may be acquired at ranges up to 4,500 meters during HLL conditions. Acquisition in excess of 3,200 meters is possible under LLL at 0.0022 lux. These ranges increase if the vehicle is moving.

# **OAHU OVERVIEW**

(b)(2)

(b) (2)

# A311 – TACTICAL FLIGHT TRAINING AREA

(b) (2)

- CALLSIGN / SIDE #
- # AND TYPE OF AIRCRAFT
- TACTICAL CALLSIGN (IF DIFFERENT)
- NUMBER OF PERSONNEL ON BOARD
- ENTRY PT, DESTINATION (LZ / SECTOR), FLIGHT ROUTE
- TYPE OF MISSION
  - SLING LOAD / FREE FLIGHT / NOE / NVD / BLACKOUT

REF 2.

# TFTA LANDING ZONES

TFTA Landing Zones							
SECTOR	NAME	GRID	SECTOR	NAME	GRID		
GREEN	LOWER 36 **	(b) (2)	RED	RED	(b) (2)		
	LIGHTNING DZ **			STESHE			
	KU TREE **			NOTHERN			
	LOWER 72 **			NORTON			
	UPPER 72 **						
	ITALY **						
	UPPER 36 **		SUMMIT SPLIT ROCK				
	AIR ASSULT		COPPER (CLOSED)				
	SCHWAI TRAILHEAD		PUPUKEA				
	LZ 1952		KAHUKU SPLIT ROCK				
	LYCNUT SCHWAI TRAIL		KAHUKU				
	ROSE		DURHAM				
	BLAKE (CLOSED)		HILL 904C				
	BUCKHOUSE (CLOSED)		KAHUKU RNG CONTROL				
	MAXWELL		THUNDERBOLT				
	DUSTY EAST (CLOSED)		RUGGED				
	DUSTY WEST (CLOSED)		WATER TANK HILL				
	FIELDS (CLOSED)		BARBER				
	LZ 1652		GLAMUZINA				
	POAMOHO RD.		MCDONALD				
	POAMOHO TRAIL		PERRY				
	BRYANS (CLOSED)		X-STRIP				
	HAMMER (CLOSED)		GROGAN				
	NON STOP (CLOSED)		MCMAHON				
	FROG POND		OLD WINDMILL				
	PUU CURTA		KANES **				
	PUU ROBERTO		KANES DZ **				
	BRYANS MTN HOUSE						
	BLACK		HELEMANO				
			LYCHEE (CLOSED)				
			BLACK				

Depicted zone dimensions subject to change based on aggressive jungle vegetation growth and landscaping personnel availability.

\*\* Denotes zone is approved for MV-22 use. All other zones are not approved for MV-22 use.

(b) (5)



(b) (5)

(b) (5)

(b) (5)

(b) (5)

(b) (5)

event shall be flown and completed with a grade of "Qualified." Conduct an objective evaluation of the Marine's knowledge of flight planning; filing, briefing, and conduct of flight under normal operating conditions, emergency procedures, closing out flight plans, and debriefing.

Requirements. As directed in the CH-53 NATOPS Flight Manual and OPNAV 3710.7.

Performance Standards. Executes flight and/or ground operations safely IAW OPNAV 3710.7 Series, Platform NATOPS, NATOPS Instrument Flight Manual, and training rules. All areas on the instrument flight evaluation are critical. An "Unsatisfactory" grade in any area shall result in an "Unsatisfactory" grade for the flight.

Prerequisites. INST-6006

External Syllabus Support. WST/APT as required

2.16.8 Helicopter Aircraft Commander (HAC)

2.16.8.1 Purpose. Demonstrate knowledge, leadership, airmanship, and judgment in all phases of flight commensurate with a Helicopter Aircraft Commander.

2.16.8.2 General

2.16.8.2.1 Squadrons shall evaluate pilots for designations at the discretion of the Commanding Officer per the criteria in the CH-53 NATOPS Flight Manual, OPNAV 3710.7, and local SOPs.

2.16.8.2.2 Upon the successful completion of the check flight the new Helicopter Aircraft Commander (HAC) will be designated in writing by the Squadron Commanding Officer.

2.16.8.2.3 Prerequisite requirements may be waived at the discretion of the Squadron Commanding Officer and details of the waiver will be annotated in the APR.

2.16.8.2.4 Flight leadership codes do not chain other syllabus events. Log the appropriate T&R syllabus event in addition to the flight leadership code. Range, ordnance, and external support will be IAW the appropriate T&R syllabus event.

2.16.8.3 Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed prior to starting the Helicopter Aircraft Commander Syllabus.

2.16.8.4 Prerequisites. NSQ-LLL, Core and Mission Skill complete. 450 total hours to start the syllabus and be recommend by Squadron Standardization Board. PUI must have 500 total hours prior to designation.

HAC-6120 1.5 \* D E A/S 1 CH-53E/WST/APT

Goal. Conduct day HAC review.

Requirements. As directed in the CH-53 NATOPS and OPNAV 3710.7, to include but not limited to all practicable operations and procedures contained in the T&R syllabus.

Performance Standards. Demonstrate proficiency, leadership and instructional techniques in all phases of CH-53 operations as appropriate. Emphasize NATOPS, ANTP 3-22.3-CH53, ASTACSOP, MAG and squadron SOPs, and the Instrument Flight Manual.



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2.11.11.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the Tactics stage:

Academic: N/A

Flight: CAL-2211

Designation/Qualification: H2P

TAC-2910 ~~2.0~~ \* D A 2 CH-53E

Goal. Conduct assault support tactical missions in a low threat environment.

Requirements

Discuss:

CRM

Planning based on METT-TSL

Route planning

Objective area planning

Air and ground unit coordination

Marine Aviation Command and Control System (MACCS)

Emissions control (EMCON), Transmission Security (TRANSEC), and

Communication Security (COMSEC)

L-Hour (event versus time-driven)

ASE considerations

Introduce:

Tactical mission analysis, planning, briefing, execution, and debriefing in support of assigned tasks

Objective area planning

MACCS

EMCON, TRANSEC, and COMSEC

Mission smartpack

Performance Standards. Plan and brief a tactical mission IAW ASTACSOP and ANTP 3-22.3-CH53. Demonstrate an understanding of the MACCS.

Remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps. To the maximum extent possible route should be a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems. Arrive in LZ within  $\pm$  30 sec of L-Hour and within 2 rotors of prebriefed landing point.

Prerequisite. CAL-2211, TERF-2311 (if flown in TERF regime), AG-2810 (~.50 cal employed), 2027-2730

Ordnance. 2 .50 cals and appropriate rounds, and Chaff and Flare as required, to the max extent possible

Range Requirements. Approved Live fire AG (.50 cal) range. Expendable approved range. CAL/MAL site. Approved TERF maneuver area/route

TAC-2911 2.0 365 R,M D A 2 CH-53E

Goal. Conduct assault support tactical missions in a medium threat environment.

Requirements

Discuss:

Same as TAC-2920

Flight leadership

ITG considerations

Embark and debark of troops and equipment

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HLL-2920 2-0 365 R,M NS A 2 CH-53E

Goal. Conduct assault support tactical missions in a low threat environment at night.

Requirements

Instructor: NSI required for initial qualification, refresher or if PUI not proficient

Discuss:

Same as TAC-2910

NS planning, briefing, and execution considerations

Introduce: NS planning, briefing, and execution considerations

Review:

TAC-2910

HNVS and HUD operations

Performance Standards. Same as TAC-2910.

Prerequisite. HLL-2221 and 2222, HLL-2321, and TAC-2910 (AG-2810 if .50 cal to be employed)

Ordnance. 2 .50 cal (TG and .50 Cal rounds optional reference Chapter 2 of CH-53 T&R)

Range Requirements. Live fire AG(.50 cal) approved and laser safe range. CAL/MAL site. Approved TERF maneuver area/route

2.11.13 NS Low Light Level (LLL)

2.11.13.1 Purpose. To develop skill in the use of NS under light levels less than .0022 lux (LLL) as predicted by the Solar Lunar Almanac Prediction (SLAP) data and to qualify the PUI in NS LLL operations.

2.11.13.2 General

2.11.13.2.1 Aircrew not NSQ LLL require supervision of an NSI for all events flown with NS.

2.11.13.2.2 NS rules of conduct will be per the T&R Program Manual and this T&R; i.e. the PUI may begin the LLL syllabus when designated NSQ HLL. A PUI is NSQ LLL (qualified to transport troops in all light level conditions) at the completion of the following flights: LLL-2230, LLL-2231, LLL-2330, LLL-2331, and LLL-2930. Pilots shall fly the above listed flights and EXT-2430 under ambient light conditions of less than .0022 lux.

2.11.13.2.3 Successful completion of ACAD-2037-2041, ACPM 8200-8250, and LLL-2930 constitutes Night Systems Qualified (NSQ) LLL. A qualification letter signed by the Squadron Commanding Officer is required, stating the pilot is NSQ LLL to carry troops under LLL conditions. The original letter shall be placed in the pilot's NATOPS jacket, and a copy in the APR with a corresponding logbook entry.

2.11.13.3 Crew Requirements for all NS LLL flights. P/P/CC/AGO.

2.11.13.4 Academic Training. The MAWTS-1 CH-53 Course Catalog contains the required readings, lectures and chalk talks which shall be completed IAW the Low Light Level stage event descriptions.

2.11.13.5 Prerequisites. The following events/designations are prerequisites prior to the commencement of the Low Light Level stage:

Academic: N/A

Flight: NSQ-HLL

Designation/Qualification: H2P

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Prerequisites. CAL-2211, HLL-2120, HLL-2220Range Requirements. CAL/MAL site.

HLL-2320 1.5 180 NS A 1 CH-53E

Goal. Conduct single ship TERF maneuvers and navigation while using NS.RequirementInstructor: NSI required for initial flights or when not HLL qualified.Discuss:

Same as TERF-2310.

TERF navigation considerations while using NS.

HNVS capabilities and limitations.

Cockpit lighting.

Low altitude emergencies.

NS failures.

Inadvertent IMC procedures.

Electro-Optic Tactical Decision Aid (EOTDA) data.

Solar Lunar Almanac Program (SLAP).

Night fixation and scan techniques.

Introduce: TERF navigation flight while using NS.Review:

TERF-2310

HNVS operations

Performance Standards. Remain oriented IAW RW TACSOP Magellan criteria while navigating to a minimum of 6 checkpoints while using 1:250,000 and 1:50,000 scale maps at or below 200' AGL. To the maximum extent possible conduct TERF navigation for a minimum of 50 nm. Demonstrate proficiency with aircraft navigation systems.Prerequisite. TERF-2310 and SHLL-2102.Range Requirements. Approved TERF maneuver area/route.

HLL-2321 1.5 180 R,M NS A 2 CH-53E

Goal. Conduct section TERF maneuvers and navigation while utilizing NS.RequirementInstructor: NSI required for initial flights, refreshers or when not HLL qualifiedDiscuss: Same as TERF-2311 and HLL-2320Introduce: Section TERF navigation while utilizing NSReview: Same as TERF-2311 and HLL-2320.Performance Standards. Same as HLL-2320.Prerequisite. TERF-2311, HLL-2120, HLL-2320.Range Requirements. Approved TERF maneuver area/route.

Demonstrate understanding of FSCM utilization.

Demonstrate understanding of contingency considerations.

Prerequisites. ACPM-8630, ACPM-8660, Designated HAC with a minimum of three flights as a HAC in a wingman position.

External Syllabus Support. Escort FW/RW aircraft optional, WST/APT (as required)

SL-6202      1.5      \*      (NS)      A/S      2 AsltSpt Aircraft/WST/APT      TEN+

Goal. Conduct a day or night Core Skill based Section Leader review.

Requirements. Plan, brief, lead, and debrief a section flight utilizing principles of CRM and flight leadership to ensure mission success. The flight should offer sufficient opportunity to demonstrate cruise principles, conduct lead changes, TERF flight and navigation, cruise and parade formations, and section landings. The SLUI shall demonstrate comprehensive knowledge and understanding of T&R Manual, NATOPS, OPNAV 3710.7, ASTACSOP, local SOPs, local course rules, and ORM/CRM principles.

Instructor: Division Leader or higher.

Performance Standards.

TERF events shall navigate a route at or below 200' AGL and remain oriented IAW ASTACSOP Magellan criteria while navigating to a minimum of six checkpoints while using 1:250,000 and 1:50,000 scale maps as appropriate. To the max extent possible the route should be a minimum of 50nm.

NS (HLL or LLL) events shall ensure proper NVD considerations and planning is accomplished.

Brief event IAW SOPs and TTPs.

Conduct event IAW NATOPS and OPNAV 3710.

Maintain proper formation and mutual support to and from the working area.

Ensure effective CRM for navigation and obstacle clearance.

Demonstrate effective inter and intra cockpit communication and leadership required for precise navigation and flight management.

Effectively manage fuel and airspace.

Accurately recall and reconstruct events during debrief.

Provide valid learning points.

Prerequisites. ACPM-8630, ACPM-8660; Designated HAC with a minimum of three flights as a HAC in a wingman position.

External Syllabus Support. WST/APT (as required).

SL-6203      1.5      \*      R      NS      A      2 AsltSpt Aircraft

Goal. Conduct a Section Leader evaluation utilizing a MCT based tactical scenario in a low to medium threat environment. Day or night; Emphasis should be on situational awareness, flight maturity, CRM, and the tactical and operational knowledge required of a Section Lead.

Requirement. Completion of 6200, 6201, and 6202 meets the requirement for the SLUI to be designated a Section Leader. The SLUI shall plan, brief, lead, and debrief a day or night section in a low/medium threat MCT based tactical flight. This flight should include escort, fire support considerations, and aerial gunnery. The SLUI shall demonstrate comprehensive knowledge and understanding of T&R Manual, NATOPS, ASTACSOP, local SOP, local course rules, and ORM/CRM principles.



# Night Imaging & Threat Evaluation Lab

INITIAL REFRESHER

NVD Course Roster

Date 13 JAN 16

AN/AVS-9R

Other \_\_\_\_\_

Rank	Name (Last, First)	SSN (Last 4)	Unit / Aircraft	Test Grade
	(b)(6) (b) (3) 10 USC § 130b		HMH 463	NA
			HMH 463	NA.

(b)(6) (b) (3) 10 USC § 130b

ENCLOSURE (139)

ENCLOSURE ( )

# Night Imaging and Threat Evaluation Laboratory Course Critique

Name \_\_\_\_\_

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

Date

13 JAN 16

Course taught (Indoc/Refresher NVG Training / Other \_\_\_\_\_)

Platform flown

CH-53E

Instructor \_\_\_\_\_

(b)(6) (b) (3) 10 USC § 130b

MAWTS-1 is constantly seeking to improve its course materials and provide relevant training for the fleet operators. Please provide all relevant comments below. Both positive and negative comments are relevant, and will help to improve the structure of future courseware...

	Weak		Fleet Average				Outstanding	
	1	2	3	4	5	6	7	8
Structure of the Course	1	2	3	4	5	6	7	
Course Length	1	2	3	4	5	6	7	
Courseware (Binders, books, cd's)	1	2	3	4	5	6	7	
<u>Lecture Material</u>								
Introduction	1	2	3	4	5	6	7	
Other <u>Power Point</u>	1	2	3	4	5	6	7	
Other _____	1	2	3	4	5	6	7	
Other _____	1	2	3	4	5	6	7	
Other _____	1	2	3	4	5	6	7	
<u>Demonstrations/Hands on Training</u>								
Terrain Board	1	2	3	4	5	6	7	
NVD/LEP Hands on	1	2	3	4	5	6	7	
Other _____	1	2	3	4	5	6	7	
<u>Examination</u>	1	2	3	4	5	6	7	

Additional Comments:

GREAT CLASS. NEW DIGITAL TERRAIN BOARD

IS GREAT. REQUEST TO ADD IN DEMO OF ANOTHER

AK TO DEMO WINGMAN POSITION.



February 25, 2016

Marine Corps Base Hawaii

From: Mishap Investigation Support Team (MIST)

To: HMMH-463 Aviation Mishap Board (AMB)

**Title: In-Field Report containing findings from in-field investigation concerning the HMMH-463 class A mishap which occurred on 15 January 2016. The Aviation Life Support Systems (ALSS), seats, and restraint systems were the focus of the in-field investigation.**

In the analysis of the wreckage of the two aircraft, the following items were the points of interest for the in-field investigation: the recovered Aviation Life Support Systems (ALSS), 2 gunners belts, and the recovered pilot/co-pilot seats. It is important to note that this mishap was not survivable. Both aircraft sustained extremely high loading throughout the aircraft and subsequently broke up into many small pieces. Based on the energy associated with this mishap, not only was the survivable space not maintained in either aircraft, but the impact loads far exceeded human tolerances. There is no expectation that anyone could survive the dynamic environment associated with this mishap.

For the purpose of this report, the aircraft will be referenced as aircraft 5 and aircraft 6. Aircraft 5 has BUNO # 163061 and was first recovered while aircraft 6 was the second wreckage site salvaged. There were a total of twelve (12) personnel collectively on both aircraft; 6 on each. Each aircraft consisted of: the pilot, the co-pilot, and 4 aircrew in the cabin. When referencing directions, the aircraft reference standard is used. For this report and all Engineering Investigations (EIs) that may be completed, the above identification scheme will be used.

#### **Aviation Life Support Systems (ALSS)**

Not all of the ALSS from the mishap aircrew had been salvaged as of the writing of this report. It was reported that all the aircrew in both mishap aircraft were wearing the CMU-33/P survival vest. There were 2 gunners belts observed while in-field. There were only 10 of the 12 HGU-84 helmets recovered. Of the salvaged ALSS, each piece was visually inspected. The findings of the investigation are summarized below:

**Helmets:** Of the 10 helmets recovered, all helmets showed structural fractures of the outer shell and severe damage to the helmet liners. Some helmets were missing the helmet liners completely. Initially, there was some concern over the plastic Night Vision Goggle (NVG) mount breaking away from the helmets from potential NVG disconnect failure. Of the 10 helmets, 7 were missing the NVG mount. With the damage that was observed on the helmets, the broken NVG mount is not suspected of failing due to accelerative loads or failure of the NVGs to disconnect. Given the structural cracks, witness marks, and general condition of the helmets, it would be expected that the plastic NVG mounts would detach the helmet. Once the helmet shell flexes and deforms due to the compromise of the helmet shell, the brittle NVG mount would fail and depart the helmet. Examples of the damage to the helmets can be seen in the figures below.

ENCLOSURE (140)

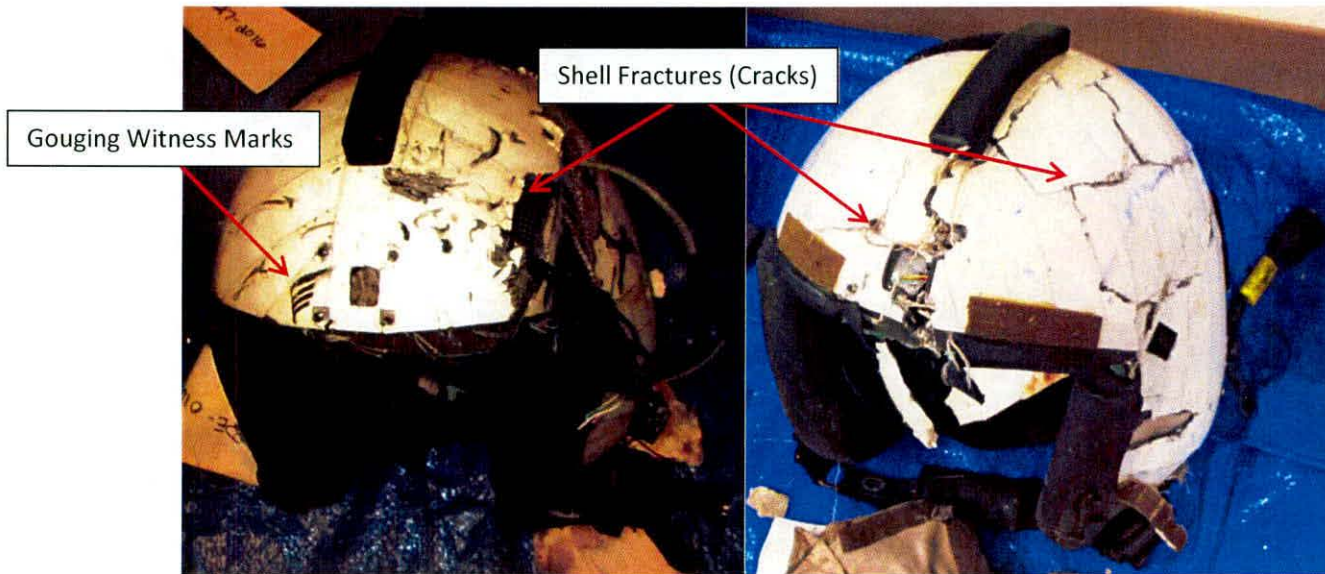


Figure: Damage to HGU-84 Helmets

**Gunners Belts:** In total two (2) gunners belts were recovered and visually inspected. Due to the condition of the belts, serial numbers could not be recovered from either belt. One gunners belt was recovered with the wreckage and located in the hangar while the other gunners belt was transported with remains and was located at the Medical Examiner's Office. Both gunners belts were missing the anchor point hardware and both had torn webbing on both the adjustable tether as well as the belt portion of the restraint. Some of the tearing was not consistent with high dynamic loading. Some webbing tears were due to either intrusion damage and/or wild life interaction. The figure below shows the gunners belt recovered that was located in the hangar.

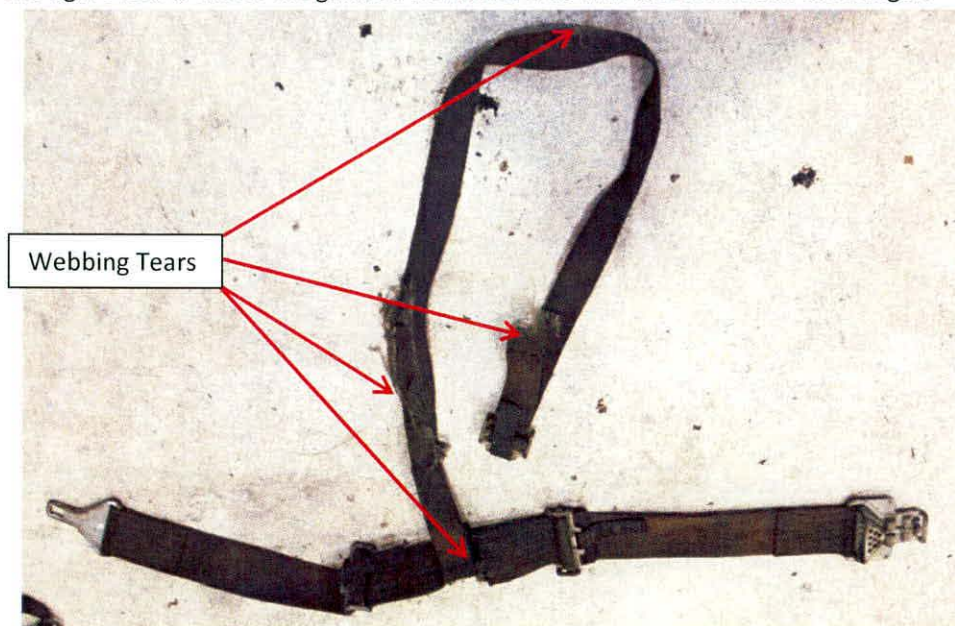


Figure: Gunners Belt



**CMU-33/P:** All of the survival vests recovered were located at the Medical Examiner's Office for the duration of this infield investigation. Although the survival vests were visually inspected, photographs were not captured of the vests. The initial plan to recover the gear, position, and photograph it with the rest of the aircrew gear in Hangar 1, was abandoned due to the level of human remain contamination. It was decided to leave all of the ALSS at the Medical Examiner's Office, in a refrigerated environment until the gear was shipped to Pax River. Hangar 1 was not adequately ventilated or refrigerated for proper storage or handling of the ALSS.

During the visual inspection of the survival vests, there were several observations made regarding the condition of the vests. All of the vests to some extent were missing equipment such as radios, LPU's, flash lights, knives, and other survival gear. Pockets containing survival gear was often ripped and torn. Also, all of the vests to some extent showed signs of intrusion damage and/or wild life interaction. One of the survival vests was missing the leg straps and hardware for both the left and right legs of the vest. Another vest had severe tearing of the leg straps on both the left and right leg straps. Multiple vests experienced failure of quick release buckles on the leg straps on the vest.

The survival vest recovered from the mishap pilot (right seat) in aircraft 5 was inspected and noted specifically as it was recovered from a known location in the aircraft and while still attached to the aircrew. That vest was missing most of the survival gear and most of the pockets were ripped and torn. The LPU was found with the inflation lobes partially exposed. There was also significant tearing to the left side on both the shoulder area and lower back of the vest.

**Flight Suits:** There were a couple flight suits recovered and visually inspected. The flight suit for the pilot of aircraft 5 was missing the left arm as well as experienced tearing along the left side. Another flight suit from a crew chief from an unknown aircraft or location experienced significant shredding of the suit. The flight suit was severely damaged from the shoulders down through the lower legs. The right breast section of the flight suit was completely missing from the right shoulder down through the right hip. The damage to the flight suits were consistent and indicative of significant intrusion and/or wildlife interaction.

### **Crashworthy Systems**

It is unknown how many troop seats were installed in the two aircraft. There were several troop seat components recovered along with components of a crew chief seat. Considering the extent of damage to the fuselage of the aircraft as well as the condition of the seat components recovered, they did not provide any useful information to the infield investigation. The intrusion damage to the seats resulted in numerous failures of load paths for both the troop seats and crew chief seat. The figure below shows the general condition of the troop and crew chief seats.





Figure: Crew Chief Seat

Figure: Troop Seat

**Pilot/Co-Pilot Seats:** From the wreckage, both the pilot and co-pilot seats were recovered from aircraft 5 and only the co-pilot seat was recovered from aircraft 6. It was reported that the pilot seat from aircraft 5 was recovered with remains still in the seat and that the restraints were cut to facilitate recovery. Other than that, there were no reports of cut webbing from the seats. Across the 3 seats recovered, there were many similarities between them. All seats detached the seat track and airframe interface. Of all the seat tracks recovered, there was little airframe still attached to the seat tracks. The figure below shows the seat track and airframe interface that were recovered.

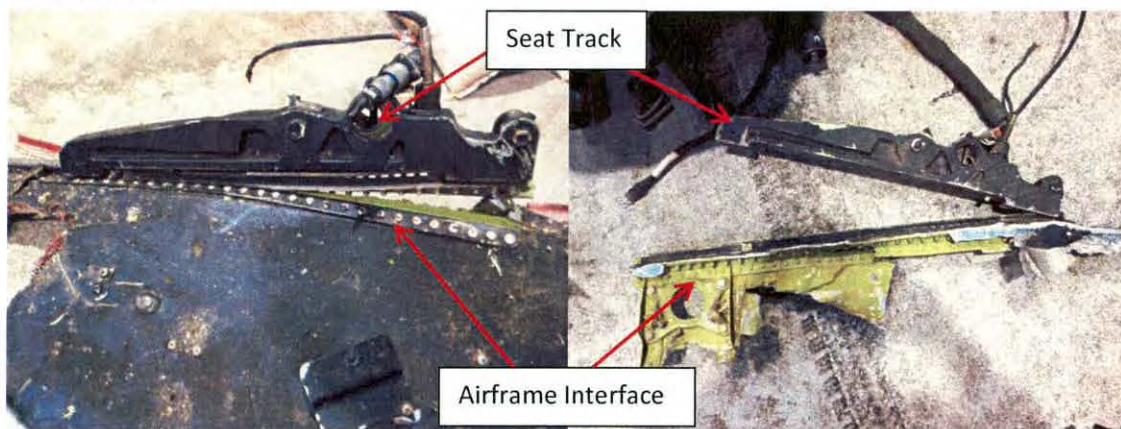
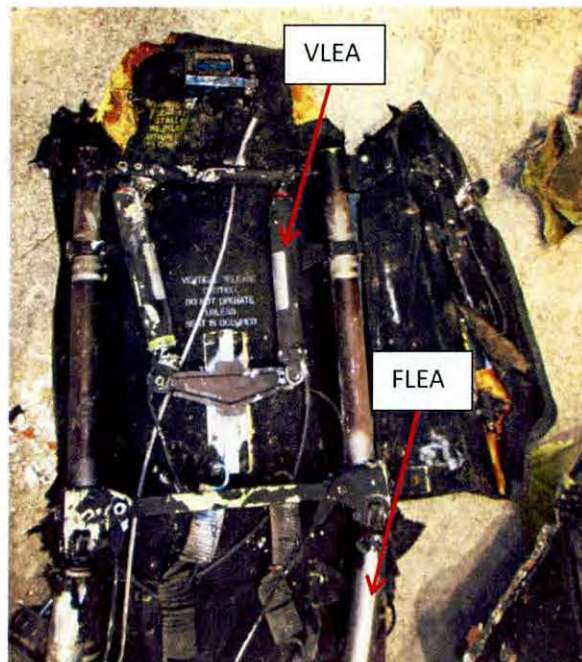


Figure: Seat Tracks

The CH-53E cockpit seats come equipped with Variable Load Energy Absorbers (VLEA) to absorb energy in the vertical direction as well as Fixed Load Energy Absorbers which are intended to absorb energy in the horizontal direction. There are 2 VLEA's and 2 FLEA's on each seat for a total of 4 Energy Absorbers (EA's). Of the 12 potential EA's present on the 3 seats, only 1 was still attached to the seat structure at both points. The right side VLEA on the pilots seat from aircraft 5 was still intact. All other EA's were separated from their respective structure. Once the structural failures were to occur, the EA's could no longer absorb energy. None of the EAs stroked during this mishap. The figure below shows the VLEA from the pilot's seat.



**Figure: EA's on back of pilot seat.**

Each of the 3 seats recovered showed signs of significant intrusion into the survivable space of the cockpit. All 3 seats had bending of the seat guide tubes, however they were not bent in a consistent fashion between the 3 seats. The guide tubes were not consistent between the pilot and co-pilot seat in aircraft 5. All of the seats had their ceramic armor fractured on both the seat pan and seat back. All of the seats had delamination of the composite seat bucket structure to varying degrees. The pilot seat on aircraft 5 had significant damage to the left of the seat bucket. Both of the MA-16 inertia reels from aircraft 5 were both severely damaged. All the seats had their armor wings broken, with 2 of the seats broken off completely. The armor wing for the co-pilot seat in aircraft 6 was not recovered.

All three seats restraint systems were visually inspected. All three had varying degrees of webbing tearing experienced on the restraints. Some of the webbing tears appeared to be due to overload of the webbing, while some of the tears appeared to be cut in an erratic fashion. It was not possible infield to determine if the cutting was due to intrusion or due to wildlife interaction. With the restraint systems, there was only one consistent damage pattern noted between the cockpit seats during the infield investigation.

On both of the seats recovered on aircraft 5 it was noted that there was a twist in the crotch strap anchor point hardware. Both crotch strap hardware was twisted in the right direction. There were no witness marks on either piece of hardware that would be indicative of a strike. This shift indicates that the occupant's inertia heavily loaded the restraints pulling the buckle assembly toward the right of the seats at a very high load. This can be seen in the figure below.





Figure: Pilot Seat

Figure: Co-Pilot Seat

#### Conclusions/Recommendations

The energy levels associated with this mishap far exceed the design conditions of the crashworthy systems or ALSS onboard the aircraft. All helmets showed varying extent of damage to the outer shell, compromising the survivable volume of the helmet as well as any impact protection they may have provided. Based on the extent of the damage to the seats, it is difficult to make conclusions on the performance of the systems involved due to the intrusive nature of the damage. As previously stated, without survivable space maintained, the capabilities of the crashworthy systems are very limited. The seats primary load paths were compromised in many locations on both the seat as well as with the airframe. This severely restricted the seats ability to absorb energy. There was no evidence that showed that the performance of any of the ALSS or crashworthy systems onboard the two mishap aircraft were causal to the injuries sustained in this mishap. This mishap environment was not survivable. Loads experienced in this mishap far exceeded human tolerances and survivable space was not maintained.

There was evidence of impact forces resulting in the pilot and co-pilot being thrown into the right of their seat buckets. Also there was evidence on the seat, CMU-33/P survival vest, and flight suit which showed significant intrusion to the left of the pilot seat in aircraft 5. The damage to the pilot seat's bucket assembly in aircraft 5 was concentrated to the left side of the seat. While some of the tears and cuts in webbing from the restraints appeared to be caused by over load, some appeared to be caused by intrusion and/or wildlife interaction.

This mishap is one with a severe lack of definitive data. A mishap investigation such as this could have been remarkably more definitive through the use of recording technology such as a flight data recorder used in some



commercial aircraft. Several prototype and fielded systems exist in the rotary wing community to record flight data, cockpit voice, cockpit video, and crash accelerations. In this mishap, such data could facilitate reconstructive efforts, evaluation of survivability at the various phases of the mishap, track how well crash-protective hardware performed, and assist in the development of requirements where there are unnecessary gaps in survivability.

Flight data and voice recording would also have been extraordinarily useful in understanding the sequence of events that were involved with this mishap. Such data could assist in pinpointing the casual factors, the time the crew had to react, and could provide information to support development of possible countermeasures, protective gear/systems, training, etc. that could avoid these types of mishaps in the future.

Sincerely,

(b)(6) (b) (3) 10 USC § 130b

Page 236 redacted for the following reason:

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(b)(3); (b)(5); (b)(6)



## Federal Aviation Administration

# LASER BEAM EXPOSURE QUESTIONNAIRE

Complete questionnaire and e-mail to: [laserreports@faa.gov](mailto:laserreports@faa.gov)

OR send via fax to FAA Washington Operations Center Complex (WOCC) - (202) 267-5289 ATTN: DEN

### CONTACT INFORMATION

Name of pilot/crewmember reporting

(b)(6) (b) (3) 10 USC § 1

E-mail address and phone number (e.g., home, cell, work)

(b)(6) (b) (3) 10 USC § 130b

What seat in the cockpit were you occupying at the time of the laser beam exposure?

☐ Left ☒ Right ☐ Jumpseat ☐ Flight Engineer ☐ Other/Not applicable

How many crewmembers on the flight had laser light shined directly in their eyes?

☒ None (the laser light beam did not directly enter anyone's eyes)

☐ One ☐ Two ☐ Three ☐ Four or more

*Note: If any other crewmember had direct exposure to the laser light in their eyes, each person exposed should complete their own copy of this FAA Laser Beam Exposure Questionnaire*

### FLIGHT INFORMATION

Flight number, call sign and aircraft registration number (e.g., SWA572, Southwest, N287WN)

CG 1707

Aircraft Make and Model (e.g., Boeing 737, Cessna 172, Airbus A320, BAE Jetstream 32, Dornier 328)

Lockheed C-130

Category of aircraft

☒ Airplane ☐ Rotorcraft ☐ Lighter than air ☐ Other (specify)

Type of operation

☐ Commercial Aviation ☐ General Aviation ☒ Military ☐ Law Enforcement

☐ Medical ☐ News Reporting ☐ Other (specify)

Date of laser incident

January 16, 2016

Please enter date of laser incident in Month Day, Year format (e.g., July 27, 2012). OR mouse click in the data field to display a drop down arrow to view calendar and make your selection. The calendar selection is optimized for PC's and may not be available on a Mac.

Time of laser incident (enter Universal Time Coordinated (UTC/Zulu) format rounded to the nearest five minutes)

05 : 40 UTC/Zulu

ENCLOSURE (142)

**Time of day during laser incident**

Nighttime before midnight local time

**Location of aircraft during laser incident** (Fixed Radial Distance (FRD) from navaid or airport, **OR** add lat/long coordinates)

N - 2139.7 / W - 15828

**Estimated geographic location of the laser source** (e.g., the laser source relative to KDFW approach end of runway 35L was approximately 220 degree radial and 2 miles. You can also provide estimated lat/long coordinates)

Hale'iwa Beach Park (N. shore Oahu)

**Approximate altitude of the aircraft above ground level (AGL)**

1001 - 2000 Feet AGL

**Primary direction of flight at the time of the laser incident**

☐ N ☐ NW ☐ NE ☐ E  
☐ S ☐ SW ☐ SE ☒ W ☐ None/Hover

**What phase(s) of flight were you in during the laser incident?** (check all that apply)

☐ Taxi ☐ Takeoff ☐ Climb to altitude ☒ Cruise altitude  
☐ Descent ☐ Final approach ☐ Landing ☐ Low-altitude (<500 ft. AGL) level flight  
☐ Hover ☐ Other (specify)

**EFFECT ON FLIGHT**

**Interference: Did the laser illumination incident interfere with your performance of pilot or crewmember duties during the flight?**

☐ Yes ☒ No

If you selected "Yes" above, how did the laser illumination interfere with your pilot or crewmember duties?

**Flight Path: Did the laser illumination cause the pilot/crew member to change the aircraft flight path?**

☐ No change in flight path ☐ Minor or non-adverse change ☒ Major or adverse change

**Disruption of Mission:** Answer this question **ONLY** if you were conducting law enforcement, medical or military flight operations during the time of the laser illumination incident. **Did the laser illumination incident disrupt your mission?**

☒ Yes ☐ No

If you selected "Yes" above, how did the laser illumination interfere with your mission?

We were on an active search and rescue case - searching for survivors and debris from an aerial crash involving 2 Marine

ENCLOSURE 142



## LASER INFORMATION

Color of the laser light? (if multi-colored, check all that apply)

☐

Red

☐

Blue

☒

Green

☐

Yellow

☐

Orange

☐

White

☐

Purple

☐ Other (specify)

Tracking: Did the laser beam appear to deliberately track the aircraft?

☒ Yes ☐ No ☐ Unsure/other (specify)

Cockpit illumination: Did the laser beam enter through the windscreen and illuminate any part of the cockpit?

☐ Yes ☒ No ☐ Other (specify)

Eye exposure: Did the the laser beam light shine directly into one or both of your eyes?

☒ Did not shine directly in my eye(s) ☐ Shined a little in my eye(s) ☐ Shined brightly in my eye(s)

**EFFECT ON YOUR EYE(S):** Answer questions below **ONLY** if the laser beam shined a little or brightly in your eye(s)

Did you experience any adverse VISION EFFECTS\* from the exposure? (check all that may apply)

- ☒ Did not experience adverse vision effects
- ☐ Glare (could not see past the light while it was in your eye(s))
- ☐ Temporary flash blindness and/or after images (similar to a camera flash)
- ☐ One or more blind spots (spots in visual field lasting longer than 5-10 minutes)
- ☐ Blurry vision
- ☐ Significant loss of night vision
- ☐ Other (specify)

### \*Examples of common vision effects

**Glare:** A temporary disruption in vision caused by the presence of a bright light (such as an oncoming car's headlights) within an individual's field of vision. Glare lasts only as long as the bright light is actually present within the individual's field of vision.

**Flash blindness:** A temporary visual interference effect that persists after the source of the illumination has ceased, similar to a bright camera flash.

**After image:** An image that remains in the visual field after an exposure to a bright light.

**Blind spot:** A temporary or permanent loss of vision of part of the visual field. Unlike an after image, a blind spot does not fade, or fades very slowly (taking many minutes, hours or days to fade out).

Did you experience any adverse PHYSICAL EFFECTS from the exposure? (check all that may apply)

- ☒ Did not experience adverse physical effects
- ☐ Watering eye(s)
- ☐ Eye(s) discomfort or pain
- ☐ Headache
- ☐ Feeling of shock
- ☐ Disorientation or dizziness
- ☐ Other (specify)

Did you rub your eye(s) after the exposure?

☒ No significant rubbing ☐ Rubbed them a little ☐ Rubbed them vigorously

ENCLOSURE 172

**EYE EXAM RESULTS:** Answer questions below **ONLY** if you had an eye exam after the laser incident

Enter the medical facility name:

What type of doctor did the primary or most comprehensive examination of your eye(s)?

- ☐ Retinal Specialist
- ☐ Ophthalmologist (medical doctor specializing in eye health)
- ☐ Optometrist (tests for visual acuity and eye diseases; prescribes and fits glasses/contacts)
- ☐ Optician (fits glasses/contacts)
- ☐ Emergency room doctor, nurse or technician
- ☐ Other (specify)

Describe the results of the medical evaluation:

**LASER INCIDENT REPORTING**

Did you report the incident to Air Traffic Control (ATC)?

- ☐ Did not report to ATC
- ☒ Reported via aircraft radio communication
- ☐ Reported via phone call
- ☐ Reported via walk-in to FAA ATC facility
- ☐ Other (specify)

Did you report the laser incident to an FAA Flight Standards (AFS) field office? (e.g., FSDO, CMO, CHDO)

- ☒ Did not report to AFS
- ☐ Reported via aircraft radio communication
- ☐ Reported via phone call
- ☐ Reported via walk-in to FAA AFS field office
- ☐ Other (specify)

If you reported to an FAA AFS field office, enter the name and office location



### ADDITIONAL INFORMATION

Did you have any prior knowledge or training on the hazards and effects of lasers aimed at a pilot/crewmember?

- ☐ None
- ☐ Basic information about the hazards and effects of lasers
- ☒ Detailed, specific information such as how to recognize and recover from laser illuminations
- ☐ Simulator training or similar exposure to laser-like illuminations in an aviation training environment
- ☐ Other (specify)

Please feel free to add any additional information or comments about your flight, the laser incident, reporting, and/or subsequent outcome:

### THE FOLLOWING SECTION IS FOR ATC FACILITIES USE ONLY

Did you report the unauthorized laser illumination incident to the Domestic Incidents Network (DEN)?

- ☐ No ☐ Yes

What local law enforcement agency did you contact? (Include their phone number)

Was an arrest made?

- ☐ No arrest, or arrest unlikely
- ☐ Maybe, still working the case
- ☐ Yes, arrest was made
- ☐ Arrest status is unknown
- ☐ Other (specify)

### SUBMIT COMPLETED FAA LASER BEAM EXPOSURE QUESTIONNAIRE

Thank you for taking time to complete this questionnaire. Please "save" the completed questionnaire and submit to the FAA using one of the two methods described below:

1. Attach the saved PDF to an e-mail and send to: [laserreports@faa.gov](mailto:laserreports@faa.gov)
2. Send via fax to FAA Washington Operations Center Complex (WOCC) - (202) 267-5289 ATTN: DEN

20160115 1457 METAR PHNG 151457Z 16003KT 7SM FEW026 OVC055 21/19 A2988 RMK  
AO2 SLP113 T02110189 55003 \$=  
20160115 1357 METAR PHNG 151357Z 18003KT 7SM SCT027 BKN055 21/19 A2987 RMK  
AO2 SLP109 T02060189 \$=  
20160115 1257 METAR PHNG 151257Z 00000KT 7SM BKN060 20/18 A2988 RMK AO2  
SLP114 T02000183 \$=  
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AO2 SLP123 T02670178 \$=  
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ENCLOSURE (143)

20160114 1857 METAR PHNG 141857Z 00000KT 7SM CLR 23/19 A3002 RMK AO2 SLP161  
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T01890172 \$=  
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T01890178 56014 \$=





# 14 Jan 16 Mishap Update

BGen Russel A.C. Sanborn  
CG 1st MAW

(b)(6) (b) (3) 10 USC § 130b

ENCLOSURE (11)

FOUO



# Mishap Flight



- Low Light Level Tactical Training
  - Confined Area Landings (CALs)
  - Terrain Flight (TERF)
  - External Operations
- Helicopter Aircraft Commanders (HACs)
  - Weapons and Tactics Instructor (WTI)
  - Night System Instructor (NSI)
- Senior Crew Chiefs
  - Weapons and Tactics Instructor (WTI)
  - Night System Instructor (NSI)

FOUO

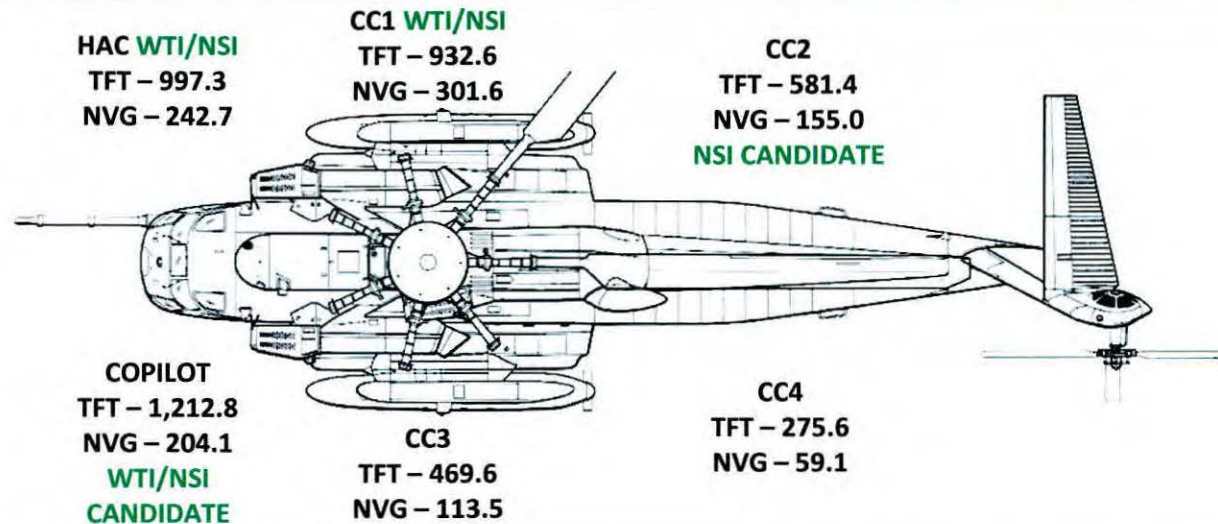


# Mishap Aircrew Flight Hours



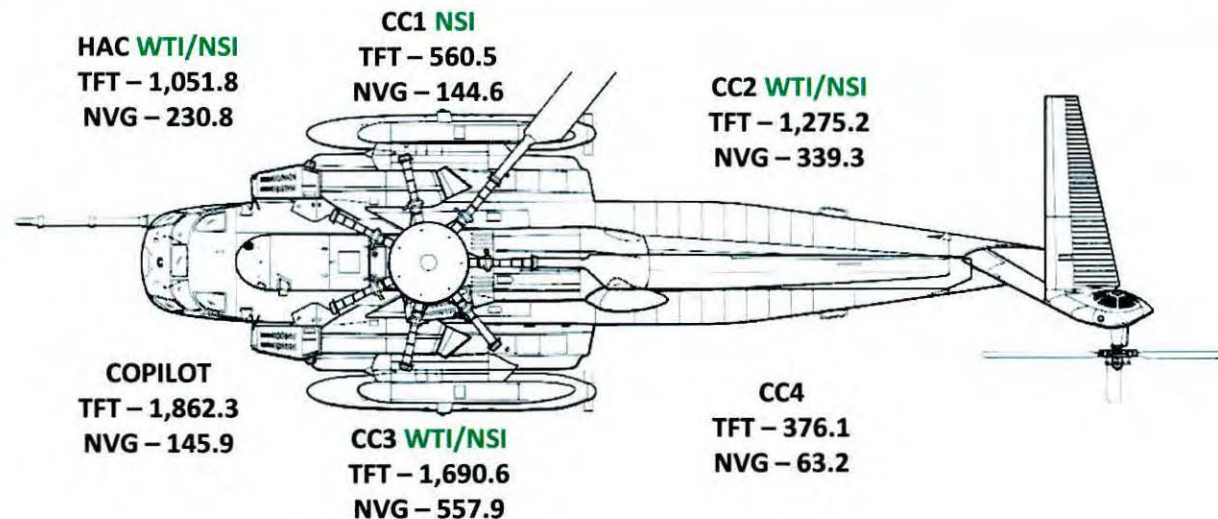
## PEGASUS 31

CREW TFT – 4,469.3  
CREW NVG – 1,076.2



## PEGASUS 32

CREW TFT – 6,816.5  
CREW NVG – 1,481.7



FOUO

ENCLOSURE 144





# Mishap Timeline (14 Jan 16)



2047-6458

**1500** – Flight Brief conducted

**2200** – Hotseat conducted

2211

**2210** – Flight departed Marine Corps Base Hawaii for the Tactical Flight Training Area

**~2245** – Civilian reports of loud bang and a large fireball in the sky 2 miles of the coast of Haliewa

**2330** – SAR aircraft (Easyrider 41) launched from MCBH

**2350** – Easyrider 41 reports debris in water near Haliewa



ENCLOSURE 144

FOUO



# Mishap Timeline (15 Jan 16)



**0036** – USCG C-130 and H-65 on station report debris .5 NM of Haleiwa

**0700** – MAG-24, MWSD-24, and HMH-463 begin movement to Haleiwa Alii Park to establish an Incident Command Site and begin Search and Rescue Operations

**1300** – Incident Command Site established with USMC, USCG, and civilian agencies

**1600** – HMH-463 personnel replaced by Golf Co 2/3



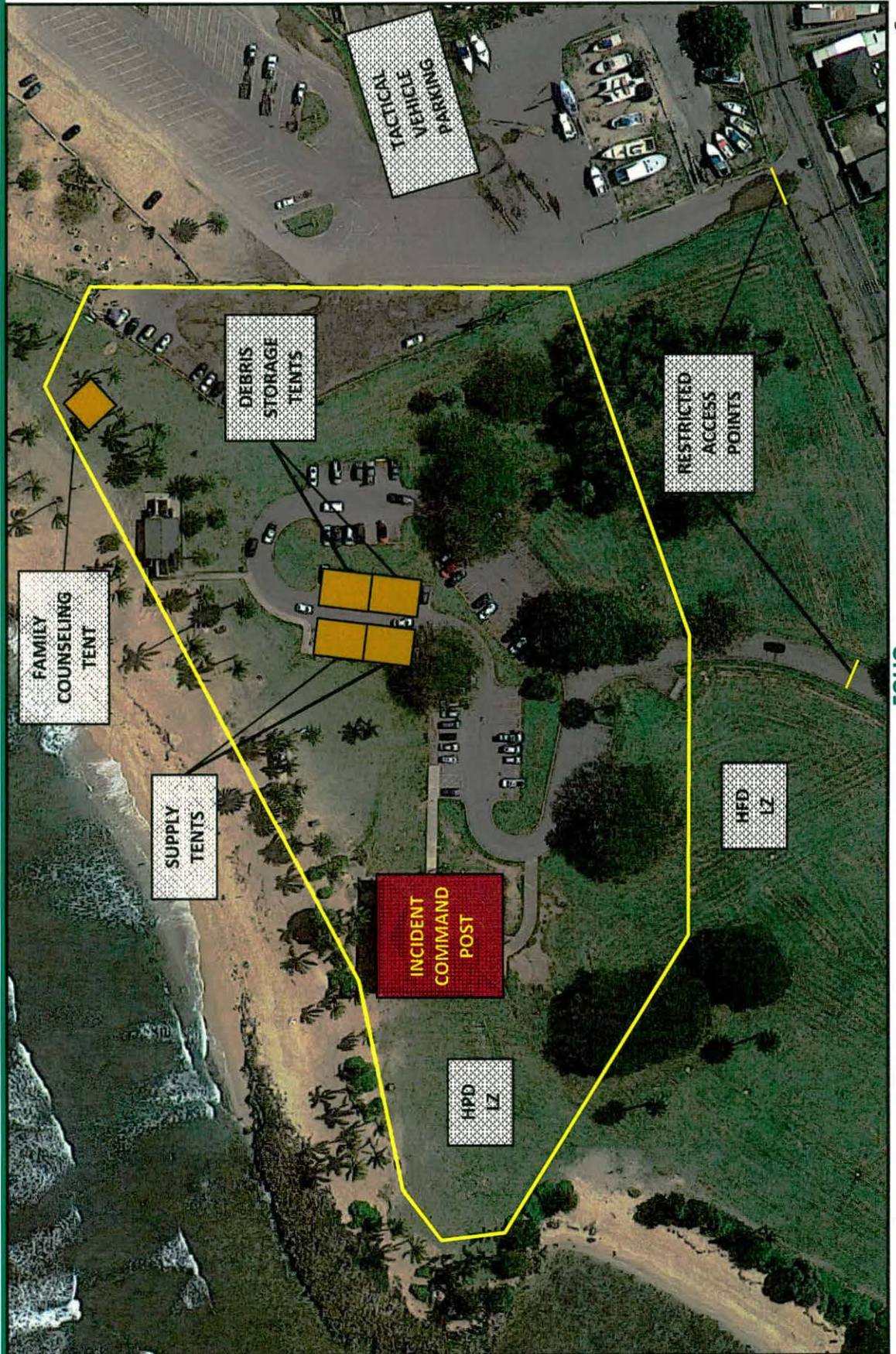
ENCLOSURE 111

FOUO





# Incident Command Site



FOUO





# Incident Command Site Units



## Marine Units:

**MAG-24 HQ**

**MWSD-24**

**2nd Bn 3d Marines**

**CLB-3**

**HQBN (PMO, CC)**

**~125 Marines/Sailors Daily**

## Civilian Agencies:

**Honolulu Police Dept**

**Honolulu Fire Dept**

**Ocean Safety Division**

**Haliewa Surf Center**

**Parks and Recreation**

## USCG Units:

**USCG Air Station Barber's  
Point**

**USCG District 14**

**USCG Sector Honolulu**

## Units:

**MAG-24 HQ**

**MWSD-24**

**2nd Bn 3d Marines**

**CLB-3**

**HQBN (PMO, CC)**

**~125 Marines/Sailors Daily**

ENCLOSURE 144

FOUO



# Search and Rescue Battle Rhythm

---



**0630** – Update Brief/Search Teams launched

**0710** – Teams begin active search of sectors

**1000** – Oncoming 2/3 Company arrives at the Incident Command Site

**TBD** – Off-going company consolidates personnel and departs for MCBH

**1400** – Update Brief/Search Teams launched

**Sunset** – All teams return to Incident Command Site/Accountability

**Night Ops** – Teams on standby for reports of debris found





# US Coast Guard and DoD Search Assets



USA/USN H-60s

## USCG & DoD Search Assets



USN P-3s



USCG MH-65s



Three USN Destroyers



USCG C-130s



Two USCG Patrol Boats  
USCGC KISKA & AHI



USMC Shoreline Search Team  
And USN Dive Unit



USNS SALVOR





# State of Hawaii On Scene Assets



**HFD Helicopter**



**HPD Helicopter**

**HFD Small Boats and PWCs**



FOUO





# Cumulative Search Efforts

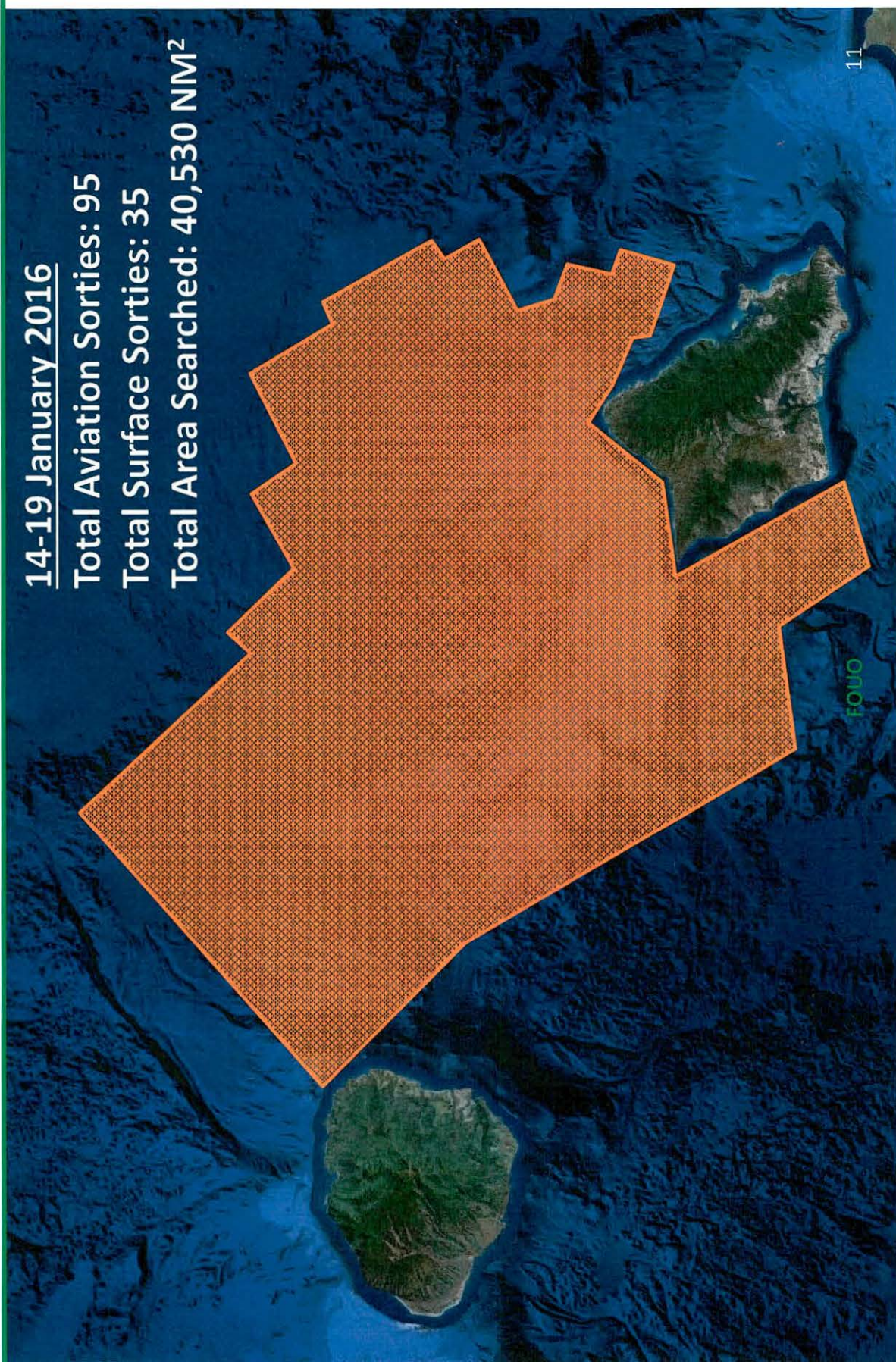


14-19 January 2016

Total Aviation Sorties: 95

Total Surface Sorties: 35

Total Area Searched: 40,530 NM<sup>2</sup>



ENCLOSURE 144









# Salvage and Recovery Operations

---



- Incident Command Site
  - Operating till Friday morning
  - Reduced Search Team footprint (1 Platoon vice 1 Company)
  - Friday – 10 man team established at Sunset Fire Station
- Kauai Operations
  - 4 man team on standby
  - Coordination with Kauai Mayor's office complete



# Marine/Family Support



- 26 CACOs
  - 12 MAG-24
  - 14 Other
- 10 MFLCs
- 22 Counselors
  - 20 Behavioral Health Counselors
  - 2 Navy Counselors
- 12 Chaplains
  - 10 MCBH Units
  - 2 JBPHH
- 4 FROs
- HMH-463 Barracks
  - Constant Counselor Presence
- Incident Command Post
  - Chaplains/MFLC/ Counselors for Family Members/Marines working
- 1900 Briefs
  - All hands effort
  - USCG Representatives
- HMH-463 CO
  - Personally talked with each Mishap Family Member
  - Continues to communicate with Families
- Road Forward (HMH-463)
  - 1 Counselor in each Shop
  - Counseling for family members (Local/Mainland)





# Questions

ENCLOSURE 144

FOUO

Subj: HMMH-463 AIR OPS SOP

d. Simulated engine-out landings are authorized only at established airfields or prepared surfaces with Crash Fire Rescue (CFR) capabilities.<sup>2</sup> (minor torque splits are permitted at remote locations to check instrument scan).

e. Simulated engine-out touch and go landings are not authorized. When a simulated engine out landing is made, the simulation will terminate at touchdown. All engines will be matched for takeoff.<sup>2</sup>

f. Simulated engine-out wave-offs with reduced power will be commenced no lower than 300' AGL. If the aircraft descends below 200' AGL on the simulated engine-out wave-off, the engine that is pulled back will be matched to the other engines to execute the wave-off.

**4021. INOPERATIVE AUXILIARY TANK FUEL GAUGES.** Flights with extreme aircraft weight requirements or in areas of high ambient conditions (i.e. temp, PA, DA) where the aircraft is operating near the edge of the safe flight envelope without operative auxiliary fuel tank gauges or corresponding IMDS readings shall require approval by the Commanding Officer. For all flight regimes, if the gauges are inoperative, the tanks shall be visually checked for quantity by the crew chief prior to flight. For FCF Flights which require a maintenance autorotation, both auxiliary fuel tanks shall be confirmed full by filling to the maximum in the fuel pits prior to departure for autorotation. With auxiliary fuel tank gauges inoperative fuel should be transferred from one side at a time in order to estimate fuel remaining in the tank.

**4022. FUNCTIONAL CHECKFLIGHTS (FCF).**

1. FCFs shall be conducted in accordance with guidance contained in ref (n), and the NATOPS Manual.

2. Aircrews flying FCFs shall be fully qualified in accordance with reference (e), this order, and the NATOPS Manual. Pilots authorized to fly FCFs shall, be recommended by the Squadron Standardization Board, and be designated in writing by the Commanding Officer.<sup>2</sup>

3. The FCF crew shall ensure a thorough test profile brief is conducted with QA prior to commencing the FCF.

**4023. OPERATIONAL POWER CHECKS (OPCs).** Operational power checks will be conducted in accordance with NATOPS.

**4024. TURNING AND COMPONENT CHECKS.**

1. No personnel shall climb on the exterior of an aircraft with the rotor head turning unless the following conditions have been satisfied:

a. A qualified observer on ICS must be positioned in such a manner as to maintain visual contact with the pilot and the personnel performing the maintenance. In addition, a QA Representative shall be present viewing the procedure.

b. Two-way communications will be maintained between the pilot and observer, crew chief or plane captain when personnel are on the sponson.

c. All platforms and cowlings must be secured with cargo straps. No rags or tools will be allowed above the sponsons while the aircraft is turning.



5. Night TERF without NVDs is prohibited.

3304. TERF REQUIREMENTS

1. All navigation flights must be pre-briefed thoroughly, including altitudes, airspeeds, and intended route of flight.
2. The profile of TERF to be flown over each portion of the routes will be pre-briefed [low level, contour, or Nap-of-Earth (NOE)].
3. An airborne safety aircraft or high-bird shall accompany all training flights navigating low level, contour, or NOE.
4. Positive radio communication shall be established between the Aircraft Commander and navigating aircraft prior to commencement of all navigation routes.
5. High-bird responsibilities may rotate between aircraft in the same flight.
6. Responsibilities of the high-bird will include, but are not limited to, the following:
  - a. Recon the route above 200 feet AGL prior to commencing the TERF navigation in order to ensure that the route is clear of obstacles that may influence the safety of the flight. A hazard map update and an on station high-bird will suffice in frequently flown or familiar areas.
  - b. Establish positive radio communications with all navigating aircraft.
  - c. Maintain visual contact with all aircraft by remaining at least 500 AGL over the navigation area and ensure adequate separation among training aircraft.
  - d. Commands given by the high-bird regarding flight safety are mandatory.
7. The Aircraft Commander of the high-bird need not be qualified in TERF.
8. Any obstacles or difficulties encountered on any TERF route/area that have not been previously identified will be reported to the appropriate controlling authority for that area.
9. TERF maneuvers shall be performed as prescribed by each T/M/S NATOPS Manual.

3305. NVD OPERATIONS

1. Aircrew participating in NVD operations shall be guided by and ensure familiarity with NVD policies set forth in reference (a), reference (k), the current edition of the USMC Assault Support Tactical SOP (NTTP 3-22.5-ASATACSOP), and the joint MARFORPAC/COMNAVSURFPAC SOP for NVD shipboard operations. All general policies addressed under these publications are germane to NVD training and operations unless otherwise stated. Additionally, the MAWTS-1 Helicopter NVD Manual and each T/M/S NTTP and T&R manual provide information on the conduct of NVD training.

Enclosure (1)

## 15 Nov 2015 HAZREP

### Narrative:

On the morning of 15 November, 2015 a flight departed Bradshaw Army Airfield on the island of Hawaii for MCBH Kaneohe Bay on the island of Oahu. Once established over water, the Helicopter Aircraft Commander (HAC) retracted the gear and soon after recognized that the utility hydraulic quantity indicator had decreased to the yellow service zone. The HAC directed the crew chief to service the utility hydraulic system and lowered the landing gear handle. The gear remained up and locked and did not indicate a transition. After the utility system was fully serviced, the HAC attempted to cycle the gear several more times with no results. Enroute, the HAC notified the Operations Duty Officer (ODO) and completed the Landing Gear System Failure Emergency Procedures including 60 degree angle of bank turns. The HAC decided to delay utilizing the Emergency Landing Gear Extension Handle until a gear up landing site was assured. Once established at home field, the HAC continued coordination with the ODO, completed the emergency procedure several more times, and calculated flight time remaining based on fuel state and burn. Once established at MCBH Kaneohe bay, the HAC was advised not to utilize the Emergency Landing Gear Extension Handle until a gear up landing site had been prepared due to potential Utility Hydraulics System failures that might degrade the system with the added pressure introduced. The aircrew then approached the 101 Pad and grounded the aircraft with the hoist while a maintenance crew attempted to manually lower the gear from a hover. The crew was unsuccessful and the aircraft then transitioned to West Field to hold while the Provost Marshal's Officers (PMO), Crash Fire Rescue (CFR), and maintenance crews established a gear up landing site at the Combat Aircraft Loading Area (CALA). This process was delayed because of the availability of the required number of mattresses, the PMO/CFR personnel were unfamiliar with the process, and the 101 pad was not equipped with the proper tie-downs to secure the mattresses. Once the CALA was prepared for the gear up landing, the aircrew then completed an approach to the CALA and activated the Emergency Landing Gear Extension System. The gear unlocked and transitioned to a fully down and locked position. The HAC then held a hover while maintenance crews inserted the gear pins and the aircraft landed. While landing, the HAC noted that the Utility Hydraulic Quantity had depleted and he now had a Utility Quantity Tail Rotor Caution Light. A shutdown was completed at the CALA with no further incident.

### Factors:

1: Statement: CFR and PMO responders were unfamiliar with procedures for gear up recovery of aircraft.

Analysis: Emergency Response personnel were directed by maintainers to great affect but were initially unfamiliar with the danger to themselves and bystanders had the aircraft landed with the gear retracted.

SI003 Failed to provide proper training: No unit interaction or training currently exists that allows PMO and CFR personnel to conduct emergency response training with their squadron counterparts.

Recommendation: Incorporate annual PMO/CFR training for emergency response hazards.

ENCLOSURE (47)



**2:** Statement: Final landing location detrimental to procedure and personnel.

Analysis: Because the CALA is often occupied by transient aircraft, ordnance, and other activities, it will not always be available for the conduct of such an emergency. It was utilized because it had the tie-down points necessary to secure the mattresses. Its location requires the evacuation of portions of the airfield and beaches if another aircraft is recovered there with a landing gear emergency. Other sites considered were not equipped with tie-downs.

OR001 Command and Control Resources Are Deficient: Other suitable recovery locations for landing gear emergencies are not equipped with tie-downs.

Recommendation: Survey and install / replace adequate tie-downs at CALA, landing pads, and West Field. Ensure primary recovery location is properly marked for landing gear / mattress location.

**3.** Statement: The Air Operations SOP has no procedures or designated location for gear up aircraft recovery.

Analysis: No current SOP exists to direct crews as to the recovery location or procedure for a gear up aircraft recovery.

SI004 Failed to Provide Appropriate Policy / Guidance: No SOP exists to direct aircrew or emergency response personnel in gear up recovery of aircraft.

Recommendation: Revise the Air Operations SOP to include locations and procedures for gear up aircraft recovery.

**CO's Comments:** Concur with recommendations. While flight crews, emergency response personnel, and maintainers responded well to the emergency, the above recommendations will improve the capabilities of those teams and enhance the safety of all parties involved.





UNITED STATES MARINE CORPS  
MARINE HEAVY HELICOPTER SQUADRON 463  
MARINE AIRCRAFT GROUP 24  
1ST MARINE AIRCRAFT WING  
PSC BOX 63055  
MCBH, KANELOE BAY, HAWAII 96863-3055

IN REPLY REFER TO  
3750  
DSS  
30 Nov 15

From: Commanding Officer, Marine Heavy Helicopter Squadron 463 (HMII-463)  
To: All Hands

Subj: COMMAND CLIMATE WORKSHOP (CCW) PROGRAM

Encl: (1) Group Rosters

1. Situation. HMII-463 will conduct a CCW on 9 – 11 December 2015. The CCW provides services to the Commanding Officer to help better understand the climate of the command and provide an outside risk assessment source. With a better understanding of the unit's strengths and weaknesses, the unit is better able to focus on areas needing improvement and reinforce the positive behaviors contributing to success. Following the CCW, the facilitators will debrief the Commanding Officer on the results of the findings.

2. Mission. On 9 – 11 December 2015, HMII-463 will conduct a CCW in order to assist the unit in achieving operational excellence. The process focusses on unit communication, trust, and integrity. It also provides the Commanding Officer with another risk management tool.

3. Execution.

a. Sequence of Events

Time	Location	Personnel	Subject
<b>Day 1</b>	Bay Side		
0730-0800	Conference Rm	Facilitators	Setup Prep
0800-1100	Conference Rm	E1 TO E3	Workshop
1100-1400	Conference Rm	E1 TO E3	Workshop
1400-1700	Conference Rm	E4 TO E5	Workshop
<b>Day 2</b>			
0730-1030	Conference Rm	E6 TO E8	Workshop
1030-1330	Conference Rm	Junior Officers	Workshop
1330-1630	Conference Rm	Senior Leaders	Workshop
<b>Day 3</b>			
0730-1130	Conference Rm	Facilitators	Data Coordination
1130-1230	CO's Office	Facilitator/CO	CO Debrief

ENCLOSURE 148

Subj: COMMAND CLIMATE WORKSHOP (CCW) PROGRAM

4. Administration and Logistics.

- a. All identified personnel are required to attend this workshop. Group leaders will be responsible for accountability and timeliness.
- b. The Operations Department shall ensure the conference room is available for use and include enclosure (1) in the flight schedule.
- c. The Logistics Department shall ensure the conference room is provided appropriate equipment for workshops.

5. Command and Signal. Point of contact for this CCW is

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(b)(6) (b) (3) 10 USC § 130b

ENCLOSURE 148

(b) (2)

(b)(6) (b) (3) 10 USC § 130b

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# CH-53E CR-CFT

## 15 Dec 2015

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ENCLOSURE (15)

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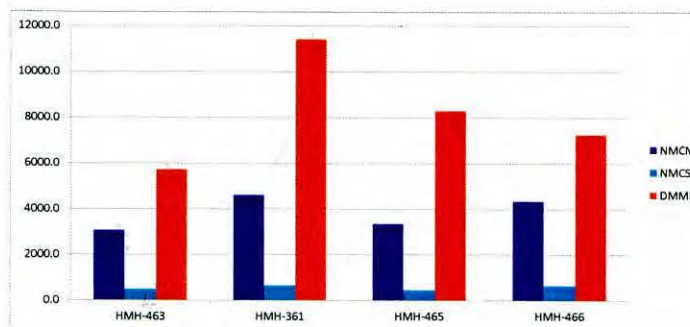
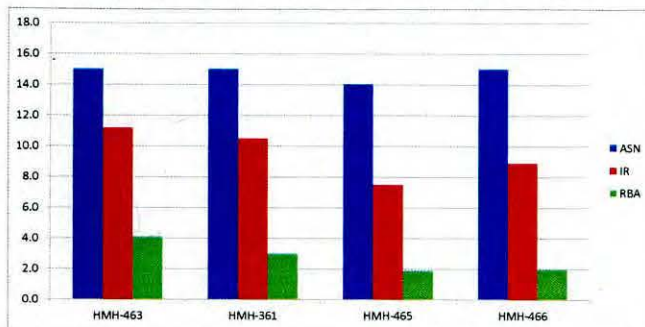
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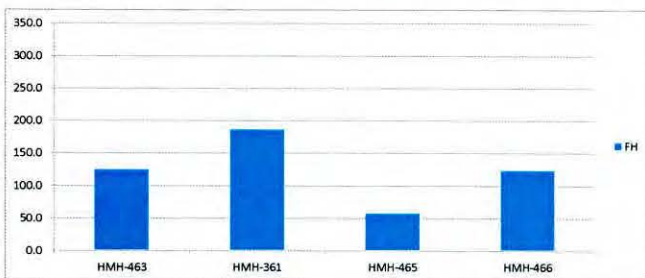
Aug

	ASN	IR	RBA	NMCM	NMCS	DMMH	FH
HMH-463	15.0	11.2	4.1	3063.0	481.0	5735.5	124.8
HMH-361	15.0	10.5	3.0	4620.0	655.0	11404.0	186.7
HMH-465	14.0	7.5	1.9	3359.0	451.0	8292.1	56.9
HMH-466	15.0	8.9	2.0	4348.0	648.0	7260.7	123.4

# ALD Fleet Readiness



**Legend**  
ASN = Assigned aircraft  
IR = In Reporting aircraft  
RBA = Ready Basic Aircraft  
NMCM = Non Mission Capable for Maintenance  
NMCS = Non Mission Capable for Supply  
DMMH = Direct Maintenance Man Hours "Total Man Hours"  
FH = Flight Hours executed from MSHARP  
All data is from the AMSRR Website, MSHARP, and DECKPLATE.



## Notes

- HMH-463 seems to be executing very well this month. From historical data (last two years), we've seen that MRF-D has created much of the flight hour and readiness increases for HMH-463. There have been times when the four aircraft at MRF-D had a higher RBA amount than what was in the rear.  
- During August, HMH-463 had multiple aircraft OOR for ramp ISR, tail pylon ISR, ASPA, and block modifications.

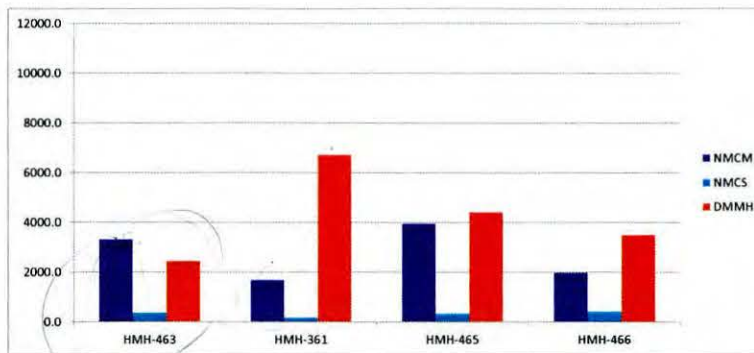
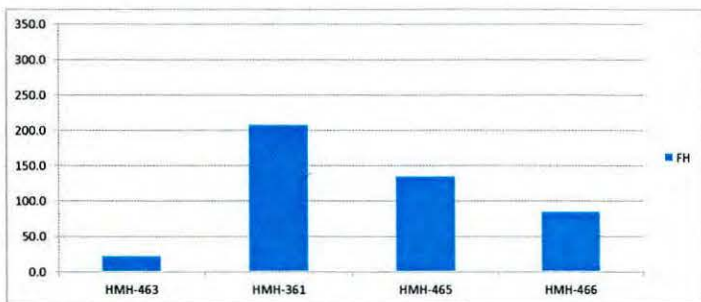
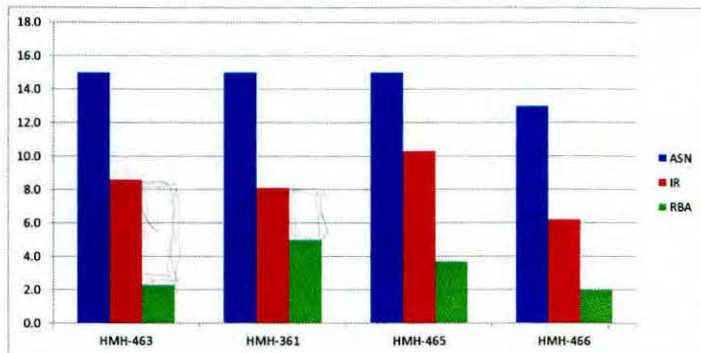
## Overview

- A squadrons performance shouldn't be view by using only readiness metrics. A holistic view must be used. In general, if readiness increases, the flight hours should increase as well. As flight hours and readiness increases, NMC should decrease. DMMH fluctuates a bit differently. As NMC increases, DMMH should absolutely increase. DMMH should always be higher than NMCM. If its not, then there is too many aircraft down for maintenance with no maintenance personnel working on them.

ENCLOSURE (153)

Sept

	ASN	IR	RBA	NMCM	NMCS	DMMH	FH
HMH-463	15.0	8.6	2.3	3319.0	364.0	2458.9	21.6
HMH-361	15.0	8.1	5.0	1686.0	171.0	6729.1	207.1
HMH-465	15.0	10.3	3.7	3960.0	346.0	4419.6	134.4
HMH-466	13.0	6.2	2.0	1979.0	429.0	3513.7	84.2



**Legend**  
 ASN = Assigned aircraft  
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 RBA = Ready Basic Aircraft  
 NMCM = Non Mission Capable for Maintenance  
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All data is from the AMSRR Website, MSHARP, and DECKPLATE.

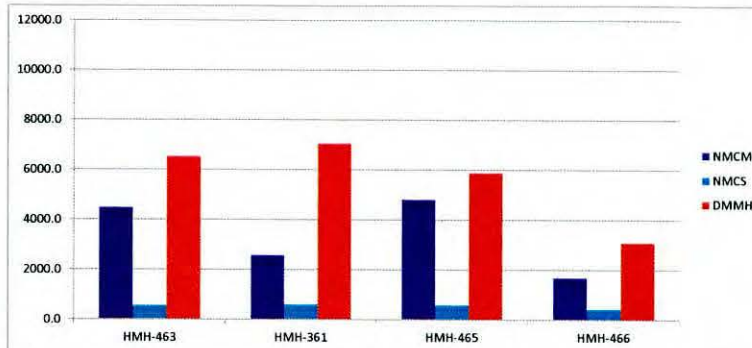
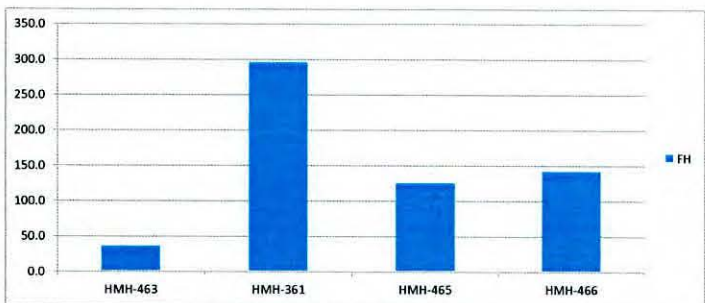
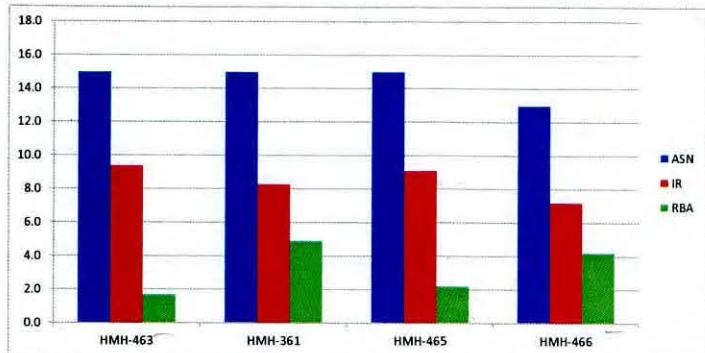
**Notes**

- HMH-463's readiness data plummeted due to the return from MRF-D during the last week of Sep and first week of Oct. All four MRF-D A/C go OOR for 96 hours prior to stratlift and 96 hours after.
- HMH-463 sent one aircraft to KAL for IMP. This also uses the 96 hour rule for stratlift.
- During September, HMH-463 had multiple aircraft OOR for ramp ISR, tail pylon ISR, ASPA, and block modifications.

ENCLOSURE ( )  
 153

Oct

	ASN	IR	RBA	NMCM	NMCS	DMMH	FH
HMH-463	15.0	9.4	1.7	4489.0	544.0	6536.1	35.9
HMH-361	15.0	8.3	4.9	2571.0	587.0	7059.2	295.8
HMH-465	15.0	9.1	2.2	4824.0	572.0	5897.9	125.2
HMH-466	13.0	7.2	4.2	1688.0	421.0	3101.0	142.0



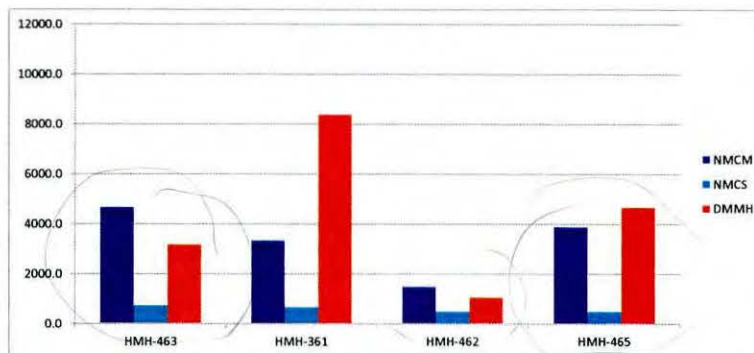
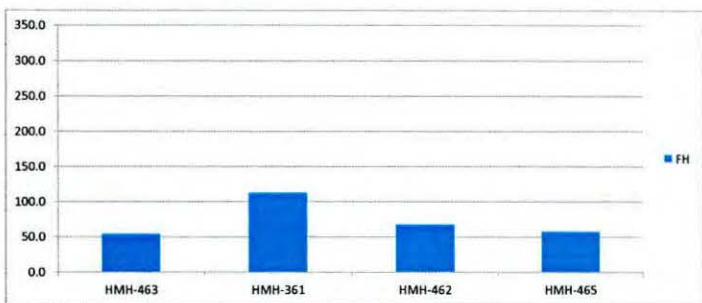
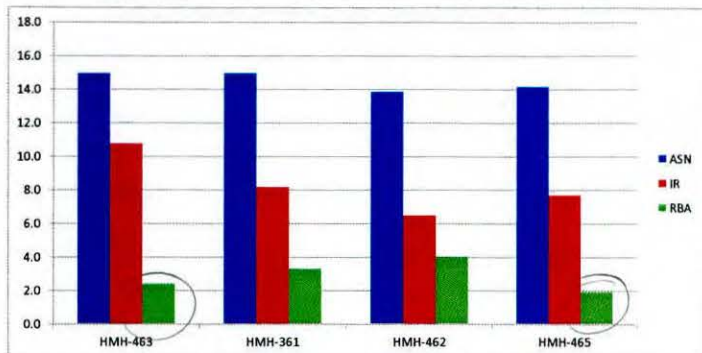
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 NMCS = Non Mission Capable for Supply  
 DMMH = Direct Maintenance Man Hours "Total Man Hours"  
 FH = Flight Hours executed from MSHARP

All data is from the AMSRR Website, MSHARP, and DECKPLATE.

**Notes**  
 - HMH-463 det A returned from MRF-D in the first week of Oct. The evolution of C-5/C-17 breakdown and build up drove up NMCM and DMMH.

463 - 465  
 1.9 - 4.1 RBA  
 DMMH - DMMH  
 40 - 140

Nov	ASN	IR	RBA	NMCM	NMCS	DMMH	FH
HMH-463	15.0	10.8	2.4	4662.0	721.0	3182.2	54.9
HMH-361	15.0	8.2	3.3	3329.0	645.0	8398.3	112.9
HMH-462	13.9	6.5	4.0	1478.0	484.0	1064.1	68.1
HMH-465	14.2	7.7	1.9	3886.0	488.0	4683.4	57.8

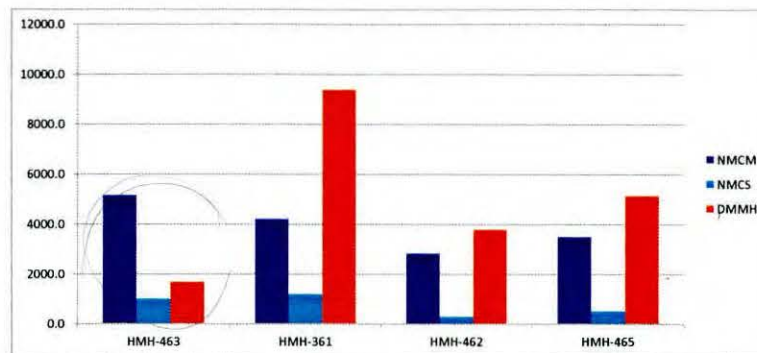
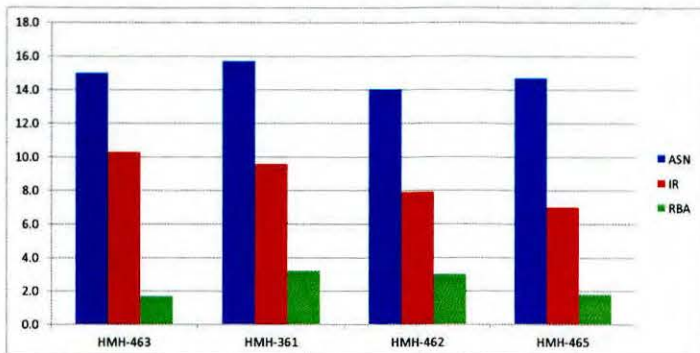


**Legend**  
 ASN = Assigned aircraft  
 IR = In Reporting aircraft  
 RBA = Ready Basic Aircraft  
 NMCM = Non Mission Capable for Maintenance  
 NMCS = Non Mission Capable for Supply  
 DMMH = Direct Maintenance Man Hours "Total Man Hours"  
 FH = Flight Hours executed from MSHARP

All data is from the AMSRR Website, MSHARP, and DECKPLATE.

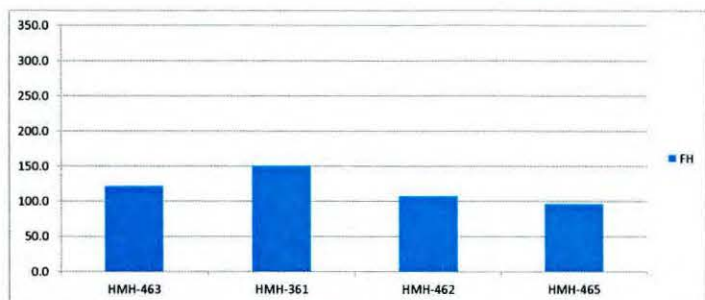
463-465  
 2.1 - 1.9  
 463 - 465  
 60 60

Dec	ASN	IR	RBA	NMCM	NMCS	DMMH	FH
HMH-463	15.0	10.3	1.7	5156.0	1003.0	1691.9	122.5
HMH-361	15.7	9.6	3.2	4199.0	1183.0	9390.8	150.9
HMH-462	14.0	7.9	3.0	2831.0	292.0	3791.1	108.1
HMH-465	14.7	7.0	1.8	3503.0	525.0	5151.3	96.8



**Legend**  
 ASN = Assigned aircraft  
 IR = In Reporting aircraft  
 RBA = Ready Basic Aircraft  
 NMCM = Non Mission Capable for Maintenance  
 NMCS = Non Mission Capable for Supply  
 DMMH = Direct Maintenance Man Hours "Total Man Hours"  
 FH = Flight Hours executed from MSHARP

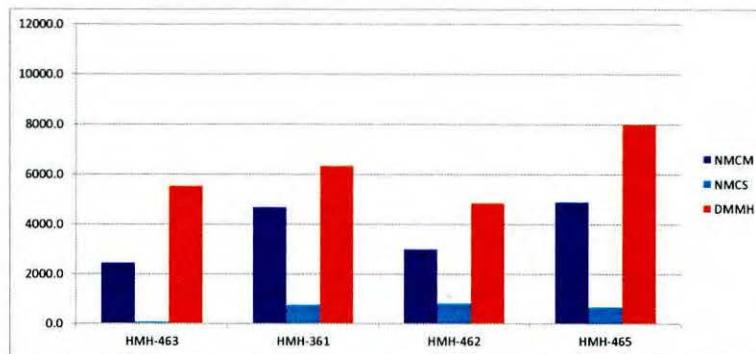
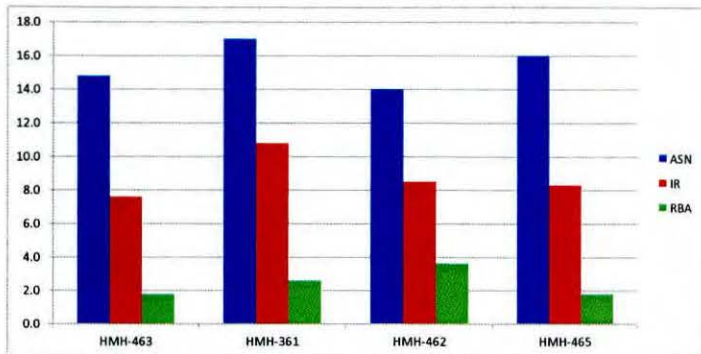
All data is from the AMSRR Website, MSHARP, and DECKPLATE.



463-465  
 1.9 - 1.9  
 DMMH & DMMH  
 120 - 90

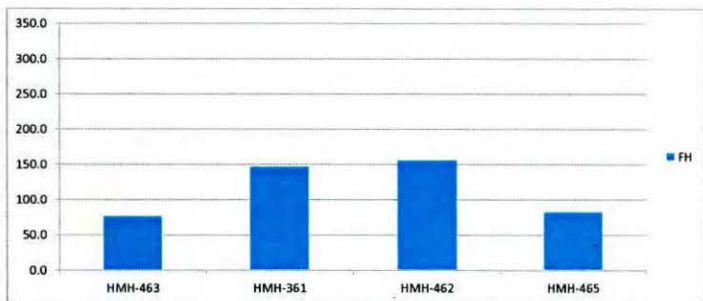


Jan	ASN	IR	RBA	NMCM	NMCS	DMMH	FH
HMH-463	14.8	7.6	1.8	2427.0	62.0	5523.4	76.5
HMH-361	17.0	10.8	2.6	4658.0	754.0	6331.2	146.9
HMH-462	14.0	8.5	3.6	2982.0	813.0	4846.8	156.1
HMH-465	16.0	8.3	1.8	4876.0	672.0	7985.1	82.5



**Legend**  
 ASN = Assigned aircraft  
 IR = In Reporting aircraft  
 RBA = Ready Basic Aircraft  
 NMCM = Non Mission Capable for Maintenance  
 NMCS = Non Mission Capable for Supply  
 DMMH = Direct Maintenance Man Hours "Total Man Hours"  
 FH = Flight Hours executed from MSHARP

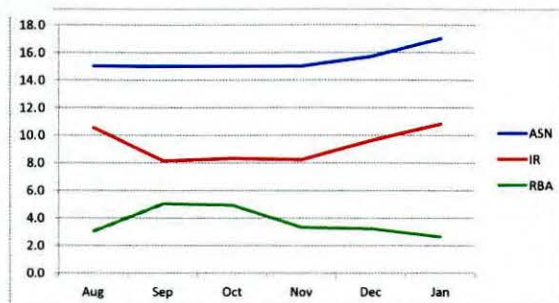
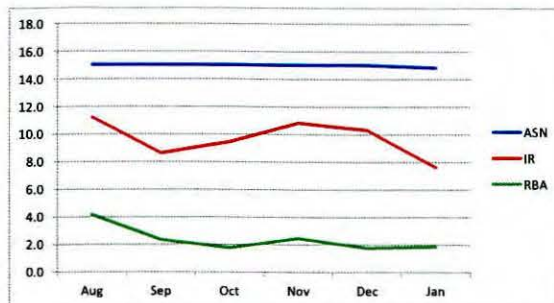
All data is from the AMSRR Website, MSHARP, and DECKPLATE.



463-465

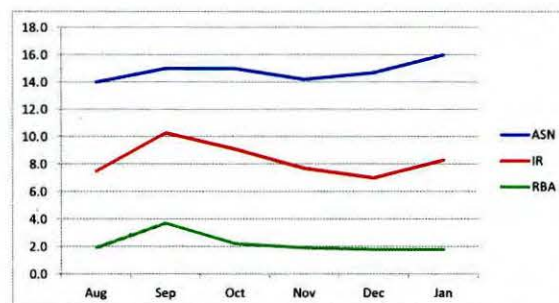
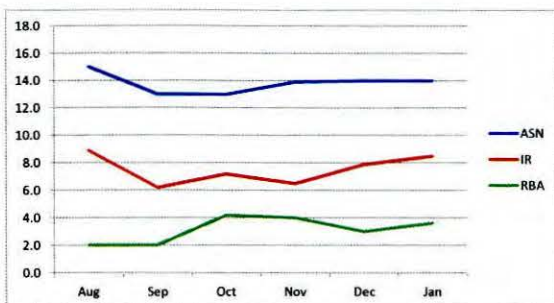
HMH-46	ASN	IR	RBA
Aug	15.0	11.2	4.1
Sep	15.0	8.6	2.3
Oct	15.0	9.4	1.7
Nov	15.0	10.8	2.4
Dec	15.0	10.3	1.7
Jan	14.8	7.6	1.8

AV = 2.33



HMH-361	ASN	IR	RBA
Aug	15.0	10.5	3.0
Sep	15.0	8.1	5.0
Oct	15.0	8.3	4.9
Nov	15.0	8.2	3.3
Dec	15.7	9.6	3.2
Jan	17.0	10.8	2.6

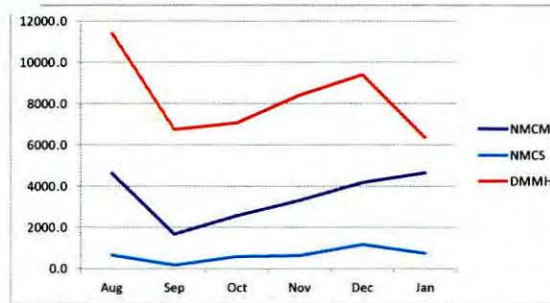
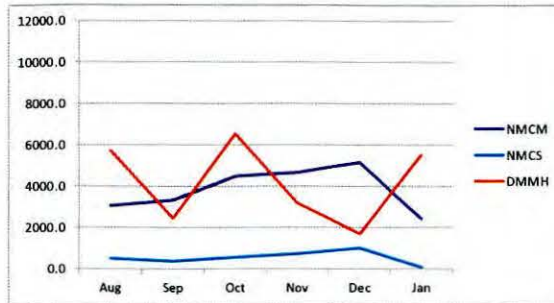
HMH-466/462	ASN	IR	RBA
Aug	15.0	8.9	2.0
Sep	13.0	6.2	2.0
Oct	13.0	7.2	4.2
Nov	13.9	6.5	4.0
Dec	14.0	7.9	3.0
Jan	14.0	8.5	3.6



HMH-465	ASN	IR	RBA
Aug	14.0	7.5	1.9
Sep	15.0	10.3	3.7
Oct	15.0	9.1	2.2
Nov	14.2	7.7	1.9
Dec	14.7	7.0	1.8
Jan	16.0	8.3	1.8

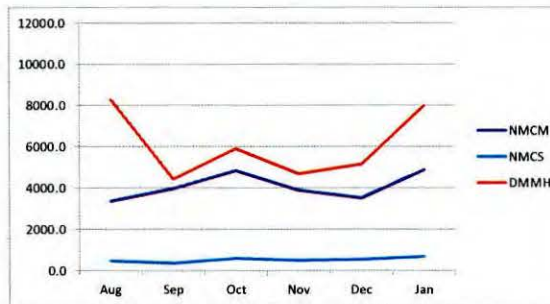
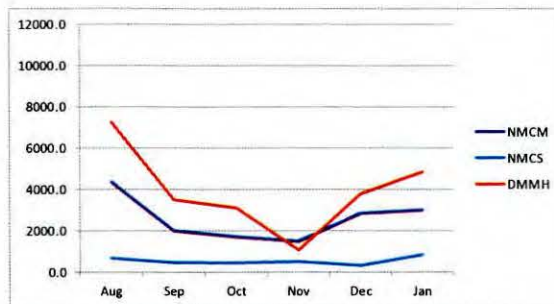
AV = 2.21

HMH-46	NMCM	NMCS	DMMH
Aug	3063.0	481.0	5735.5
Sep	3319.0	364.0	2458.9
Oct	4489.0	544.0	6536.1
Nov	4662.0	721.0	3182.2
Dec	5156.0	1003.0	1691.9
Jan	2427.0	62.0	5523.4



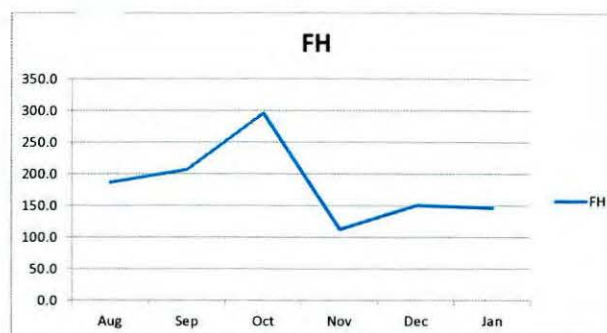
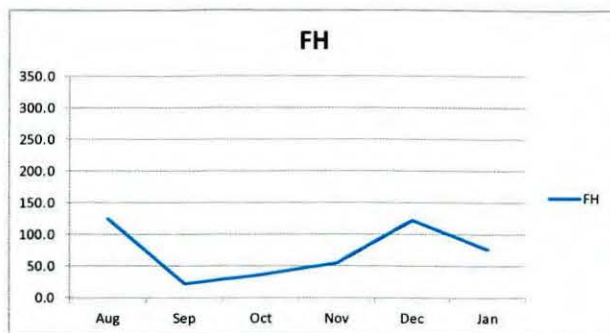
HMH-361	NMCM	NMCS	DMMH
Aug	4620.0	655.0	11404.0
Sep	1686.0	171.0	6729.1
Oct	2571.0	587.0	7059.2
Nov	3329.0	645.0	8398.3
Dec	4199.0	1183.0	9390.8
Jan	4658.0	754.0	6331.2

HMH-466/462	NMCM	NMCS	DMMH
Aug	4348.0	648.0	7260.7
Sep	1979.0	429.0	3513.7
Oct	1688.0	421.0	3101.0
Nov	1478.0	484.0	1064.1
Dec	2831.0	292.0	3791.1
Jan	2982.0	813.0	4846.8



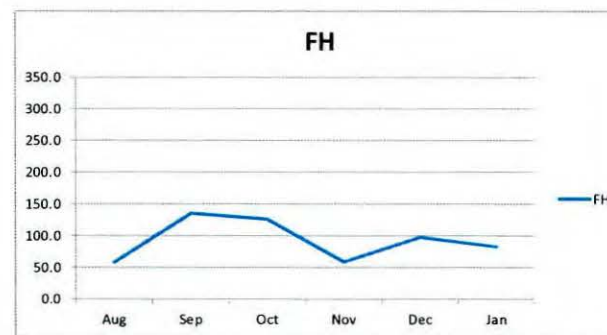
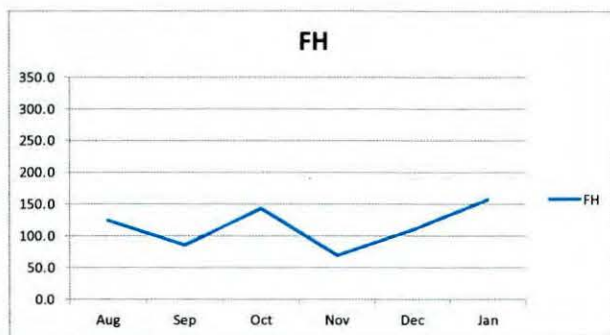
HMH-465	NMCM	NMCS	DMMH
Aug	3359.0	451.0	8292.1
Sep	3960.0	346.0	4419.6
Oct	4824.0	572.0	5897.9
Nov	3886.0	488.0	4683.4
Dec	3503.0	525.0	5151.3
Jan	4876.0	672.0	7985.1

HMH-46	FH
Aug	124.8
Sep	21.6
Oct	35.9
Nov	54.9
Dec	122.5
Jan	76.5



HMH-361	FH
Aug	186.7
Sep	207.1
Oct	295.8
Nov	112.9
Dec	150.9
Jan	146.9

HMH-466/462	FH
Aug	123.4
Sep	84.2
Oct	142.0
Nov	68.1
Dec	108.1
Jan	156.1



HMH-465	FH
Aug	56.9
Sep	134.4
Oct	125.2
Nov	57.8
Dec	96.8
Jan	82.5

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He1o\_Recovery\_Order\_FOUO

OTTUZYUW RUOIAAA7321 0230916-UUUU--RUNREMS.

ZNR UUUUU

O 230910Z JAN 16

FM COMPACFLT PEARL HARBOR HI

TO RUOIAAA/COMTHIRDFLT

ZEN/COMMARFORPAC G THREE

INFO ZEN/HQ USPACOM HONOLULU HI

RUOIAAA/CNO WASHINGTON DC

RUOIAAA/COMUSFLTFORCOM NORFOLK VA

RUOIAAA/COMNAVSEASYS COM WASHINGTON DC

RUOIAAA/COMNAVAIRPAC SAN DIEGO CA

ZEN/COMNAVAIRSYS COM PATUXENT RIVER MD

ZEN/COMNAVREG PEARL HARBOR HI

ZEN/COMNECC LITTLE CREEK VA

ZEN/COMNECCPAC PEARL HARBOR HI

ZEN/COMMARFORPAC CMD OPS CNTR

ZEN/COMMARFORPAC SAFETY

ZEN/CG III MEF

ZEN/MAG TWO FOUR

ZEN/CO MCB HAWAII KANEOHE BAY HI

ZEN/CO MCB HAWAII KANEOHE BAY HI

ZEN/COMSUBPAC PEARL HARBOR HI

RUOIAAA/COMSUBPAC PEARL HARBOR HI

RUOIAAA/COMNAVSAFECEN NORFOLK VA

ZEN/JOINT TASK FORCE HOMELAND DEFENSE FT SHAFTER HI

RUOIAAA/CCGDFOURTEEN HONOLULU HI

ZEN/COMSC NORFOLK VA

ZEN/CTF 33

ZEN/COMEODGRU ONE

ZEN/COMEODGRU TWO

ZEN/USNS SALVOR

ZEN/EODMU ELEVEN

RUOIAAA/MOBDIVSALU ONE

ZEN/MOBDIVSALU TWO

ZEN/HMH FOUR SIX THREE

RUOIAAA/COMPACFLT PEARL HARBOR HI

ZEN/COMPACFLT PEARL HARBOR HI

BT

UNCLAS F O U O //N04002//

MSGID/ORDER/COMPACFLT/-/JAN//

REF/A/MSG/MARFORPAC/210135ZJAN16//

REF/B/EMAIL/CPF/21JAN16//

NARR/(U/FOUO) REF A IS MARFORPAC REQUEST FOR AIRCRAFT SALVAGE

SUPPORT. REF B IS COMPACFLT VOCO TO COMMENCE MOVEMENT OF

C3F ASSETS.//

ORDTYP/TASKORD/CPF//

TIMEZONE/Z//

RMKS/(U/FOUO) THIS IS A COMPACFLT TASKING ORDER DIRECTING C3F TO

CONDUCT DIVING AND SALVAGE OPERATIONS FOR TWO USMC CH-53E AIRCRAFT.

THIS ORDER TERMINATES UPON COMPLETION OF

RECOVERY AND REDEPLOYMENT.//

GENTEXT/SITUATION/

1. (U/FOUO) SITUATION. AT 0835Z, 15 JAN 16, TWO USMC CH-53E

HELICOPTERS COLLIDED AND CRASHED APPROXIMATELY 1.7NM NW OF

HALEIWA, HI WITH A TOTAL OF 12 SOULS ONBOARD. BOTH HELICOPTERS HAVE

BEEN LOCATED WITHIN CLOSE PROXIMITY TO EACH OTHER IN 280 FSW.//

GENTEXT/MISSION/

2. (U/FOUO) MISSION. IAW REF A, COMPACFLT PROVIDES DIVING AND

SALVAGE SUPPORT FOR AIRCRAFT WRECKAGE RECOVERY AND RELOCATION

TO MCAS KANEOHE BAY.//

GENTEXT/EXECUTION/

3. (U) EXECUTION.

3.A. (U) COMMANDERS INTENT.

HeTo\_Recovery\_Order\_FOUO

- 3.A.1. (U/FOUO) PURPOSE: TO EXECUTE DIVING AND SALVAGE OPERATIONS FOR 2X CH-53E AIRCRAFT IVO NORTH SHORE, OAHU.
- 3.A.2. (U/FOUO) METHOD: DEPLOY FORCES AND CONDUCT RECOVERY OF AIRCRAFT AND REMAINS.
- 3.A.3. (U/FOUO) END STATE: AIRCRAFT ARE RECOVERED, REMAINS ARE REPATRIATED, AND FORCES ARE REDEPLOYED.
- 3.B. (U) TASKS.
  - 3.B.1. (U) COMTHIRDFLT.
    - 3.B.1.A. (U/FOUO) IDENTIFY FORCES REQUIRED TO SUPPORT SALVAGE OPERATIONS. SUPPORT REQUIREMENTS IN REF A.
    - 3.B.1.B. (U/FOUO) DEPLOY FORCES AND EQUIPMENT TO EXECUTE SALVAGE OPERATIONS.
    - 3.B.1.C. (U/FOUO) PROVIDE CONOPS TO CPF NLT 1700W 24 JAN 16 TO INCLUDE TIMELINE OF OPERATIONS, C2, ORM AND CONCERNS OR ISSUES.
    - 3.B.1.D. (U/FOUO) EXECUTE SALVAGE OPERATIONS.
    - 3.B.1.E. (U/FOUO) PROVIDE DAILY UPDATES TO CPF BWC DAILY NLT 1500Z VIA EMAIL WHILE SALVAGE OPS ARE ON-GOING.
    - 3.B.1.F. (U) REDEPLOY UPON COMPLETION OF SALVAGE OPERATIONS.
  - 3.B.2. (U) MARFORPAC.
    - 3.B.2.A. (U/FOUO) REQUEST A LNO FROM THE CONTROLLING CUSTODIAN TO EMBARK USNS SALVOR TO ASSIST IN THE IDENTIFICATION AND DISPOSITION OF AIRCRAFT PARTS AND TO ARTICULATE THE PRIORITIES OF ITEMS TO BE RECOVERED.
    - 3.B.2.B. (U/FOUO) REQUEST DETAILED INSTRUCTIONS/CONOPS FOR THE DISPOSITION OF THE AIRCREW REMAINS.
    - 3.B.2.C. (U/FOUO) REQUEST A PRE-BRIEF FROM THE COGNIZANT MEDICAL EXAMINER TO PROVIDE THE SALVAGE DIVERS SITUATIONAL AWARENESS OF AIRCREW REMAINS PRIOR TO COMMENCING SALVAGE OPERATIONS.
- 3.C. (U) PLANNING GUIDANCE
  - 3.C.1. (U) TYPE OF AIRCRAFT:
    - 3.C.1.A. (U/FOUO) AIRCRAFT 1: CH-53E, BUNO 163061
    - 3.C.1.B. (U/FOUO) AIRCRAFT 2: CH-53E, BUNO 161255
  - 3.C.2. (U/FOUO) LOCATION OF WRECKAGE (BOTH AIRCRAFT): 1.7NM NW OF HALEIWA, OAHU, HI LATITUDE 21 38.010N / LONGITUDE 158 07.538W.
  - 3.C.3. (U/FOUO) ORDNANCE (BOTH AIRCRAFT): NO EXTERNAL ORDNANCE ALTHOUGH EXPLOSIVE DEVICES EXIST CONSISTING OF CARTRIDGE ACTUATION DEVICES (CAD). REFER TO REF A FOR CAD CONFIGURATION.
  - 3.C.4. (U/FOUO) ADDITIONAL HAZARDS (BOTH AIRCRAFT):
    - 3.C.4.A. (U/FOUO) CRASHWORTHY LEAD ACID BATTERY
    - 3.C.4.B. (U/FOUO) LITHIUM BATTERIES
    - 3.C.4.C. (U/FOUO) AA ALKALINE BATTERIES
    - 3.C.4.D. (U/FOUO) INFLIGHT BLADE INSPECTION SYSTEM CONTAINS 3500 MICROCURIES OF STRONTIUM 90
    - 3.C.4.E. (U/FOUO) ICE DETECTOR PROBE CONTAINS 50 MICROCURIES OF STRONTIUM 90
    - 3.C.4.F. (U/FOUO) FIRE SUPPRESSION SYSTEM CONTAINS 4.5 LBS OF MONOBROMOTRIFLUOROMETHANE
  - 3.C.5. (U/FOUO) CLASSIFIED MATERIAL (BOTH AIRCRAFT):
    - 3.C.5.A. (U/FOUO) TWO KY-58 SECURE VOICE MODULE COMMUNICATION ENCRYPTION DEVICES.
    - 3.C.5.B. (U/FOUO) ONE R/T 1851A SATELLITE/VHF/UHF COMMUNICATIONS.
  - 3.C.6. (U/FOUO) DEPTH (BOTH AIRCRAFT): 230\*280 FSW.
- 3.D. (U/FOUO) COORDINATING INSTRUCTIONS.
  - 3.D.1. (U/FOUO) ENVIRONMENTAL CONCERNS: MAKE ALL REASONABLE EFFORTS TO AVOID ADVERSE IMPACTS TO CORAL AND MARINE LIFE (INCLUDING HAWAIIAN ISLAND HUMPBACK WHALE NATIONAL MARINE SANCTUARY RESOURCES AS THE SALVAGE MAY BE OCCURRING WITHIN SANCTUARY BOUNDARIES).
  - 3.D.2. (U/FOUO) DIRLAUTH ALCON. C3F DIRLAUTH MARFORPAC AND OTHER SUPPORTING ENTITIES AS REQUIRED. KEEP CPF BWC INFORMED.
  - 3.D.3. (U/FOUO) DURATION: APPROXIMATELY 21 DAYS. CONSIDERATION WILL BE TAKEN INTO THE DIVING AND SALVAGE OPERATIONAL CAPABILITIES BASED ON ENVIRONMENTAL IMPACTS, SPECIFICALLY SEA STATE AND CURRENTS DURING THIS TIME OF YEAR ON THE NORTH SHORE. OPERATIONAL RISK MANAGEMENT

Helio\_Recovery\_Order\_FOUO

(ORM) SHOULD BE ADHERED TO WITH THE UNDERSTANDING THAT A NO-GO CRITERIA WILL IMPACT THE TIMELINE FOR BOTH RECOVERY OF THE AIRCRAFT AND REMAINS REQUESTED BY CONTROLLING CUSTODIAN.

3.D.4. (U/FOUO) NOTIFY CPF IF THE REQUIRED SALVAGE OPERATIONS EXCEED THE CAPABILITY OF ASSIGNED FORCES.

3.E. (U/FOUO) PUBLIC AFFAIRS (PA). PA POSTURE IS PASSIVE. REFER QUERIES TO (b)(6) (b) (3) 10 USC § 130b

3.E.1. (U/FOUO) MARFORPAC POC IS (b)(6) (b) (3) 10 USC § 130b

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

3.E.2. (U/FOUO) COORDINATE RECOVERY TIMELINES WITH ON-SCENE INVESTIGATION TEAM FROM THE NAVAL SAFETY CENTER.

3.F. (U) RELIGIOUS SUPPORT.

3.F.1. (U/FOUO) COORDINATE RELIGIOUS MINISTRY AS REQUIRED.// GENTEXT/ADMIN AND LOG/

4. (U) ADMIN AND LOG.

4.A. (U/FOUO) FUNDING. FUNDING GUIDANCE TO BE PROVIDED SEPCOR. CAPTURE ALL COSTS ASSOCIATED WITH THIS OPERATION.

4.B. (U/FOUO) SUBMIT REQUESTS FOR SUPPORT TO CPF FOR ADDITIONAL SALVAGE ASSETS (E.G. HEAVY LIFT, BARGES, ETC).

4.C. (U) COORDINATE LNO EXCHANGE AS REQUIRED.// GENTEXT/COMMAND AND SIGNAL/

5. (U) COMMAND AND SIGNAL.

5.A. (U/FOUO) COMMAND RELATIONSHIPS. MARFORPAC IS THE SUPPORTED COMPONENT COMMANDER. COMPACFLT IS THE SUPPORTING COMPONENT COMMANDER. COMTHIRDFLT IS THE SUPPORTING OPERATIONAL COMMANDER. MOBILE DIVING AND SALVAGE UNIT ONE IS THE ON SCENE COMMANDER FOR SALVAGE OPERATIONS.

5.B. (U) POINTS OF CONTACT:

5.B.1. (U) MCBH: (b)(6) (b) (3) 10 USC § 130b

5.B.2. (U) MAG-24: (b)(6) (b) (3) 10 USC § 130b

5.B.3. (U) AMB SENIOR MEMBER/POC. (b)(6) (b) (3) 10 USC § 130b

(b)(6) (b) (3) 10 USC § 130b

(b) (b) (3) 10 USC § 130b (b)(6), (b)(3)

5.B.4. (b)(6), (b)(3)

5.B.5. (U) MARFORPAC: (b)(6), (b)(3) J... MARFORPAC ASO;

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

5.B.6. (b)(6), (b)(3)

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

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

5.B.7. (U) COMPACFLT:

5.B.7.A. (b)(6) (b) (3) 10 USC § 130b

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

5.B.7.B. (b)(6), (b)(3)

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

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

5.B.7.D. (U) COMPTROLLER. (b)(6), (b)(3)

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

5.B.7.E. (b)(6), (b)(3)

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

BT

#7321



UNCLAS

**REQUEST SALVAGE/RECOVERY SUPPORT**

Originator: COMMARFORPAC SAFETY

DTG: 210135Z Jan 16 Precedence: R DAC: General

TO: COMPACFLT PEARL HARBOR HI, COMPACFLT PEARL HARBOR HI, COMNAVSAFECEN NORFOLK VA

CC: CMC SD WASHINGTON DC, CMC WASHINGTON DC, USNS SALVOR, COMTHIRDFLT, COMMARFORPAC, COMMARFORPAC ALD, COMMARFORPAC G THREE, COMMARFORPAC SAFETY, CO MCB HAWAII KANEOHE BAY HI, CO MCB HAWAII KANEOHE BAY HI, CG III MEF, CG III MEF G THREE, CG FIRST MAW, CG FIRST MAW G THREE, CG FIRST MAW DOSS, MAG TWO FOUR, HMH FOUR SIX THREE, CNO WASHINGTON DC, COMNAVSEASYS COM WASHINGTON DC

RAAUZYUW RUJDAAA4528 0210232-UUUU--RUJDAAA.

ZNR UUUUU ZDH ZUI RUEOMCH5823 0210233

R 210135Z JAN 16

FM COMMARFORPAC SAFETY

TO RUOIAAA/COMPACFLT PEARL HARBOR HI

RUOIBBB/COMPACFLT PEARL HARBOR HI

RUOIAAA/COMNAVSAFECEN NORFOLK VA

INFO RUJIAAA/CMC SD WASHINGTON DC

RUJIAAA/CMC WASHINGTON DC

RUOIBBB/USNS SALVOR

RUOIAAA/COMTHIRDFLT

RUJDAAA/COMMARFORPAC

RUJDAAA/COMMARFORPAC ALD

RUJDAAA/COMMARFORPAC G THREE

RUJDAAA/COMMARFORPAC SAFETY

RUJDAAA/CO MCB HAWAII KANEOHE BAY HI

RUJIAAA/CO MCB HAWAII KANEOHE BAY HI

RUJDAAA/CG III MEF

RUJDAAA/CG III MEF G THREE

RUJDAAA/CG FIRST MAW

RUJDAAA/CG FIRST MAW G THREE

RUJDAAA/CG FIRST MAW DOSS

RUJDAAA/MAG TWO FOUR

RUJDAAA/HMH FOUR SIX THREE

RUOIAAA/CNO WASHINGTON DC

RUOIAAA/COMNAVSEASYS COM WASHINGTON DC

BT

UNCLAS

SUBJ/REQUEST SALVAGE/RECOVERY SUPPORT

REF/A/DOC/CNO/13 MAY 14//

REF/B/DOC/CNO/11 DEC 07//

REF/C/MSG/MAG-24/202146Z JAN 16//

REF/D/MSG/SECNAV WASHINGTON DC/161750Z MAR 98//

NARR/REF A IS OPNAVINST 3750.6S, SUBJ: NAVAL AVIATION SAFETY MANAGEMENT SYSTEM. REF B IS OPNAVINST 4740.2G, SUBJ: SALVAGE AND RECOVERY PROGRAM. REF C IS MAG-24 SALVAGE REQUEST. REF D IS ALNAV 020/98; SUBJ: DON SALVAGE POLICY.//

POC (b) (3) 10 USC

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

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

RMKS/1. PER REFS A THROUGH D, MARFORPAC REQUESTS RAPID SALVAGE/RECOVERY ASSISTANCE FOR TWO CH-53E AIRCRAFT WRECKAGE DUE TO DEGRADATION OF EVIDENCE ASSOCIATED WITH EXPOSURE TO SEAWATER TO AID IN THE MISHAP INVESTIGATION, PREVENT ENVIRONMENTAL DAMAGE FROM LEAKING OIL, FUEL AND DEBRIS, AND TO PREVENT FURTHER LOSS OF LIFE AND AIRCRAFT OF THIS PARTICULAR MAKE AND MODEL.

A. INFORMATION ON AIRCRAFT 1 (CH-53E)

(1) BUNO: 163061

(2) SIDE NUMBER: 05

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B. LOCATION: (b) (2)

- (1) LOCATED APPROX 1.7 NM NORTHWEST OF HALEIWA, OAHU, HAWAII.
- (2) DATE/TIME OF WRECKAGE: 14 JANUARY 2016 / 2235 (LOCAL)
- (3) WATER CURRENT AT TIME OF WRECKAGE: UNKNOWN.

## C. WATER DEPTH: 75-100 METERS

## D. AIRCRAFT WEIGHT AT TIME OF MISHAP:

- (1) BASIC WEIGHT: 36,803
- (2) CARGO: 1,000
- (3) FUEL: 8,500 LBS
- (4) TOTAL: 47,503 LBS

## E. EXTERNAL ORDNANCE: NONE

## F. PRESSURIZED CYLINDERS/CONTAINERS

## (1) TIRES:

NOSE: 105-115 PSI NITROGEN (2)  
MAIN: 155-165 PSI NITROGEN (4)

## (2) LANDING GEAR STRUTS

NOSE: APPROX. 800 PSI NITROGEN  
MAIN: APPROX. 1500 PSI NITROGEN

(3) APP START ACCUMULATOR (2): 1600-1700 PSI NITROGEN/2200-3000  
PSI WITH HYDRAULIC FLUID

(4) EMERGENCY LANDING GEAR EXTENSION BOTTLE: 2200-3150 PSI  
NITROGEN

(5) TAIL SKID: 260-300 PSI NITROGEN

(6) DAMPER ACCUMULATOR: 1000 +/- 50 PSI NITROGEN

(7) ENGINE FIRE BOTTLE (3): 600 PSI NITROGEN

(8) APU FIRE BOTTLE: 600 PSI NITROGEN

## G. CARTRIDGE ACTUATED DEVICES AND EXPLOSIVE ITEMS

(1) #1 ENGINE MAIN FIRE BOTTLE CAD

(2) #1 ENGINE RESERVE FIRE BOTTLE CAD

(3) #2 ENGINE MAIN FIRE BOTTLE CAD

(4) #2 ENGINE RESERVE FIRE BOTTLE CAD

(5) #3 ENGINE MAIN FIRE BOTTLE CAD

(6) #3 ENGINE RESERVE FIRE BOTTLE CAD

(7) LH AUX FUEL TANK CADS (2)

(8) RH AUX FUEL TANK CADS (2)

(9) CARGO RELEASE SINGLE POINT CAD

(10) RESCUE HOIST CAD

## H. CLASSIFIED EQUIPMENT

(1) KY-58

(2) KY-58

(3) R/T 1851A SATELLITE/VHF/UHF COMMUNICATIONS  
RECEIVER/TRANSMITTER

(4) ALE-47 PROGRAMMER

(5) KIT 1-C

(6) AAR-47 CENTRAL PROCESSOR

(7) AAR-47 OPTICAL SENSOR-CONVERTER (X4)

(8) AAR-47 CONTROL INDICATOR

(9) APR-39 RADAR RECEIVER (X2)

(10) APR-39 SPIRAL ANTENNA (X5)

(11) APR-39 RADAR WARNING CONTROL PANEL

(12) APR-39 RADAR SIGNAL INDICATOR

(13) ALE-47 DUAL DESPENSOR POD (X2)

(14) ALE-47 DIGITAL CONTROL DISPLAY UNIT

## I. ADDITIONAL HAZARDS:

(1) CRASHWORTHY LEAD ACID BATTERY

(2) LITHIUM BATTERIES

(3) AA ALKALINE BATTERIES

(4) INFLIGHT BLADE INSPECTION SYSTEM CONTAINS 3500 MICROCURIES  
OF STRONTIUM 90

(5) ICE DETECTOR PROBE CONTAINS 50 MICROCURIES OF STRONTIUM 90

ENCLOSURE ( 155

(6) FIRE SUPPRESSION SYSTEM CONTAINS 4.5 LBS OF MONOBROMOTRIFLUOROMETHANE

J. ITEMS CONSIDERED BUT NOT APPLICABLE:

- (1) STATUS OF AUXILIARY TANKS IS NOT KNOWN
- (2) STATUS OF ALL MAIN ROTOR BLADES AND TAIL ROTOR BLADES IS UNKNOWN

K. INFORMATION ON AIRCRAFT 2

- (1) BUNO: 161255
- (2) SIDE NUMBER: 06

L. LOCATION: 21 38.01N 158 07.538W

- (1) LOCATED APPROX 1.7 NM NORTHWEST OF HALEIWA, OAHU, HAWAII.
- (2) DATE/TIME OF WRECKAGE: 14 JANUARY 2016 / 1035 (LOCAL)
- (3) WATER CURRENT AT TIME OF WRECKAGE: UNKNOWN.

M. WATER DEPTH: 75-100 METERS

N. AIRCRAFT WEIGHT AT TIME OF MISHAP:

- (1) BASIC WEIGHT: 40,989
- (2) CARGO: 1,000
- (3) FUEL: 9,000 LBS
- (4) TOTAL: 50,989 LBS

O. EXTERNAL ORDNANCE: NONE

P. PRESSURIZED CYLINDERS/CONTAINERS

(1) TIRES:

NOSE: 105-115 PSI NITROGEN (2)  
MAIN: 155-165 PSI NITROGEN (4)

(2) LANDING GEAR STRUTS

NOSE: APPROX. 800 PSI NITROGEN

MAIN: APPROX. 1500 PSI NITROGEN

(3) APP START ACCUMULATOR (2): 1600-1700 PSI NITROGEN/2200-3000 PSI WITH HYDRAULIC FLUID

(4) EMERGENCY LANDING GEAR EXTENSION BOTTLE: 2200-3150 PSI NITROGEN

(5) TAIL SKID: 260-300 PSI NITROGEN

(6) DAMPER ACCUMULATOR: 1000 +/- 50 PSI NITROGEN

(7) ENGINE FIRE BOTTLE (3): 600 PSI NITROGEN

(8) APU FIRE BOTTLE: 600 PSI NITROGEN

Q. CARTRIDGE ACTUATED DEVICES AND EXPLOSIVE ITEMS

(1) #1 ENGINE MAIN FIRE BOTTLE CAD

(2) #1 ENGINE RESERVE FIRE BOTTLE CAD

(3) #2 ENGINE MAIN FIRE BOTTLE CAD

(4) #2 ENGINE RESERVE FIRE BOTTLE CAD

(5) #3 ENGINE MAIN FIRE BOTTLE CAD

(6) #3 ENGINE RESERVE FIRE BOTTLE CAD

(7) LH AUX FUEL TANK CADS (2)

(8) RH AUX FUEL TANK CADS (2)

(9) CARGO RELEASE SINGLE POINT CAD

(10) RESCUE HOIST CAD

R. CLASSIFIED EQUIPMENT

(1) KY-58

(2) KY-58

(3) R/T 1851A SATELLITE/VHF/UHF COMMUNICATIONS RECEIVER/TRANSMITTER

(4) ALE-47 PROGRAMMER

(5) KIT 1-C

(6) DIRECTIONAL INFRARED COUNTERMEASURES (DIRCM) USER DATA MODULE (UDM) PMCIA CARD

(7) DIRCM GUARDIAN LASER TRANSMITTER ASSEMBLY (GLTA) (X2)

(8) DIRCM INFRARED COUNTERMEASURES SENSOR (X5)

(9) DIRCM EMBEDDED GPS INERTIAL SYSTEM

(10) DIRCM COUNTERMEASURES SIGNAL PROCESSOR

(11) DIRCM COUNTERMEASURES SET CONTROL

(12) AAR-47 CENTRAL PROCESSOR

ENCLOSURE (155)



- (13) AAR-47 OPTICAL SENSOR-CONVERTER (X4)
- (14) AAR-47 CONTROL INDICATOR
- (15) APR-39 RADAR RECEIVER (X2)
- (16) APR-39 SPIRAL ANTENNA (X5)
- (17) APR-39 RADAR WARNING CONTROL PANEL
- (18) APR-39 RADAR SIGNAL INDICATOR
- (19) ALE-47 DUAL DESPENSOR POD (X2)
- (20) ALE-47 DIGITAL CONTROL DISPLAY UNIT

## S. ADDITIONAL HAZARDS:

- (1) CRASHWORTHY LEAD ACID BATTERY
- (2) LITHIUM BATTERIES
- (3) AA ALKALINE BATTERIES
- (4) INFLIGHT BLADE INSPECTION SYSTEM CONTAINS 3500 MICROCURIES OF STRONTIUM 90
- (5) ICE DETECTOR PROBE CONTAINS 50 MICROCURIES OF STRONTIUM 90
- (6) FIRE SUPPRESSION SYSTEM CONTAINS 4.5 LBS OF MONOBROMOTRIFLUOROMETHANE

## T. ITEMS CONSIDERED BUT NOT APPLICABLE:

- (1) STATUS OF AUXILIARY TANKS IS NOT KNOWN
  - (2) STATUS OF ALL MAIN ROTOR BLADES AND TAIL ROTOR BLADES IS UNKNOWN
  - (3) PILOT AND COPILOT SIDE WINDOWS WERE JETTISONED
  - (4) AIRCRAFT WAS LAST WITNESSED TO BE INVERTED AND PYLON INTACT
2. NAME AND ADDRESS OF OWNER: HMH-463 MARINE AIR GROUP-24 BOX 63055  
MCBH KANEOHE BAY, HI 96863
3. AIRCRAFT MISHAP BOARD (AMB) WILL IDENTIFY AND PRIORITIZE AIRCRAFT WRECKAGE PARTS FOR SALVAGE TO THE ON-SCENE/SHIP COMMANDER WITH SAFETY BEING PARAMOUNT DURING ENTIRE SALVAGE EFFORT. EFFORTS WILL BE MADE TO RECOVER VICTIMS INCIDENTAL TO SALVAGE OPERATIONS.
4. FOR NAVAL SAFETY CENTER: REQUEST COORDINATION OF MEDICAL EXAMINER SUPPORT FOR POSSIBLE RECOVERY OF REMAINS.
5. POINTS OF CONTACT:

## A. AVIATION MISHAP BOARD:

(b)(6) (b) (3) 10 USC § 130b

## B. MARFORPAC:

(b)(6) (b) (3) 10 USC § 130b

## C. NAVAL SAFETY CENTER:

(b)(6) (b) (3) 10 USC § 130b

BT  
#4528  
9ABB

ENCLOSURE  
155

NNNN

Received from AUTODIN 210233Z Jan 16

ENCLOSURE ( )  
155



# 24<sup>th</sup> Marine Aircraft Group and U.S. Coast Guard Fourteenth District



## USMC Waimea Bay Aircraft Incident 2016 Haleiwa, Hawaii – January 2016



Homeland  
Security

United States  
Coast Guard





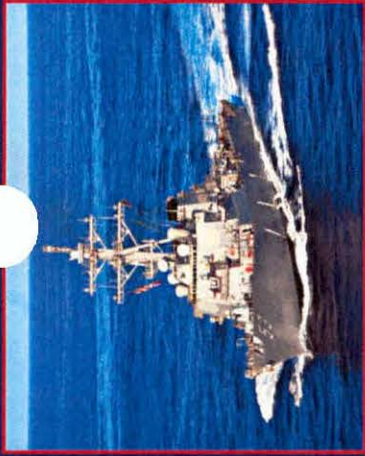
- ENCLOSURE (156)







Army/Navy H-60



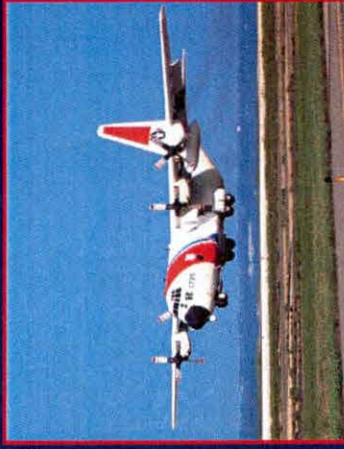
Three USN Destroyers



USN P-3



USCG MH-65



USCG C-130



Two USCG Patrol Boats  
USCGC KISKA & AHI



USMC Shoreline Search Team  
And Navy Dive Unit



USNS SALVOR

# USCG & DoD Search Assets





HFD Helicopter



HPD Helicopter

# State of Hawaii On Scene Assets



HFD Small Boats and PWCs



# DAY ONE AIR SEARCH

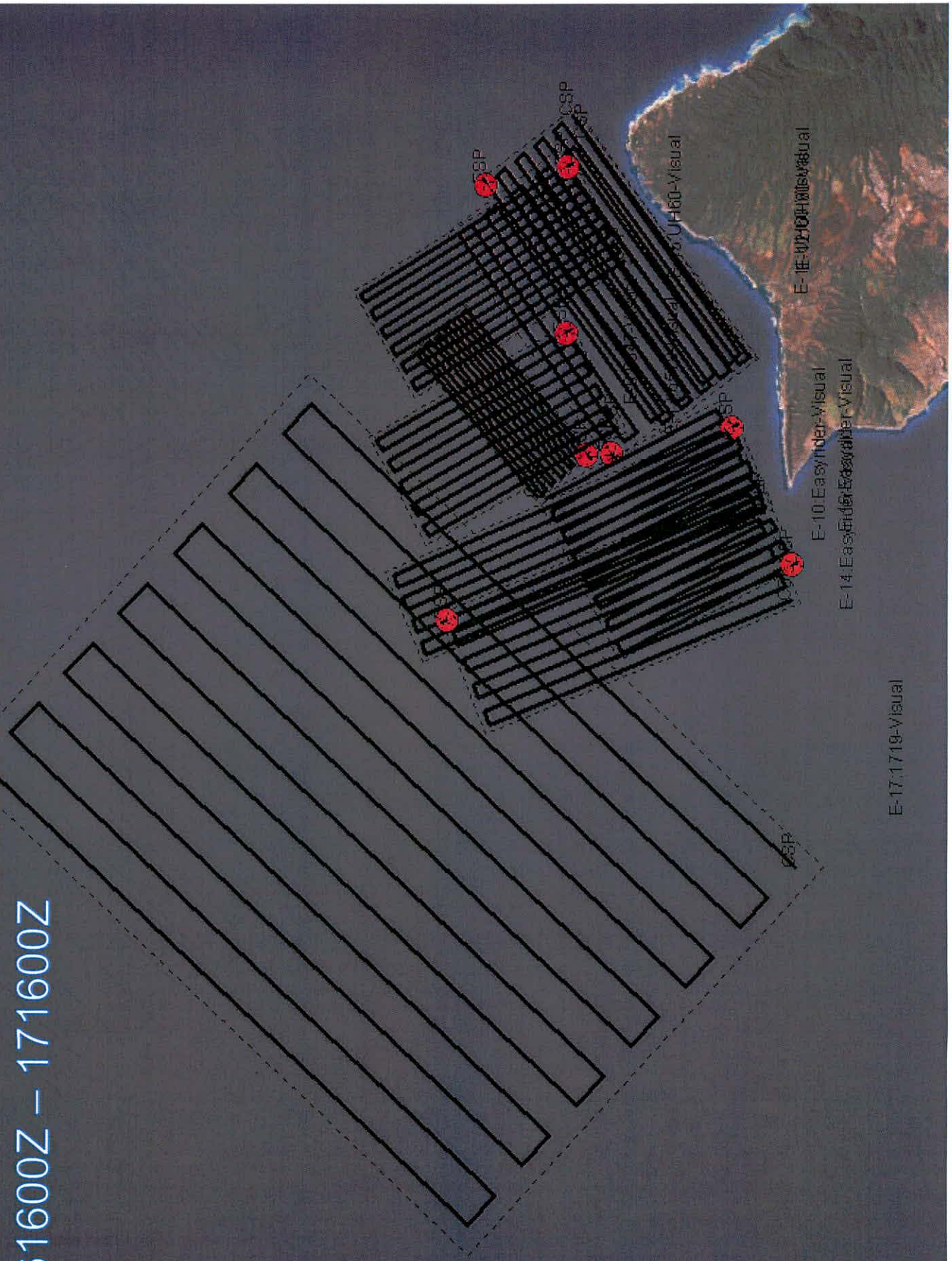
151130Z – 161600Z



D-2:17:16-Visual



161600Z - 171600Z







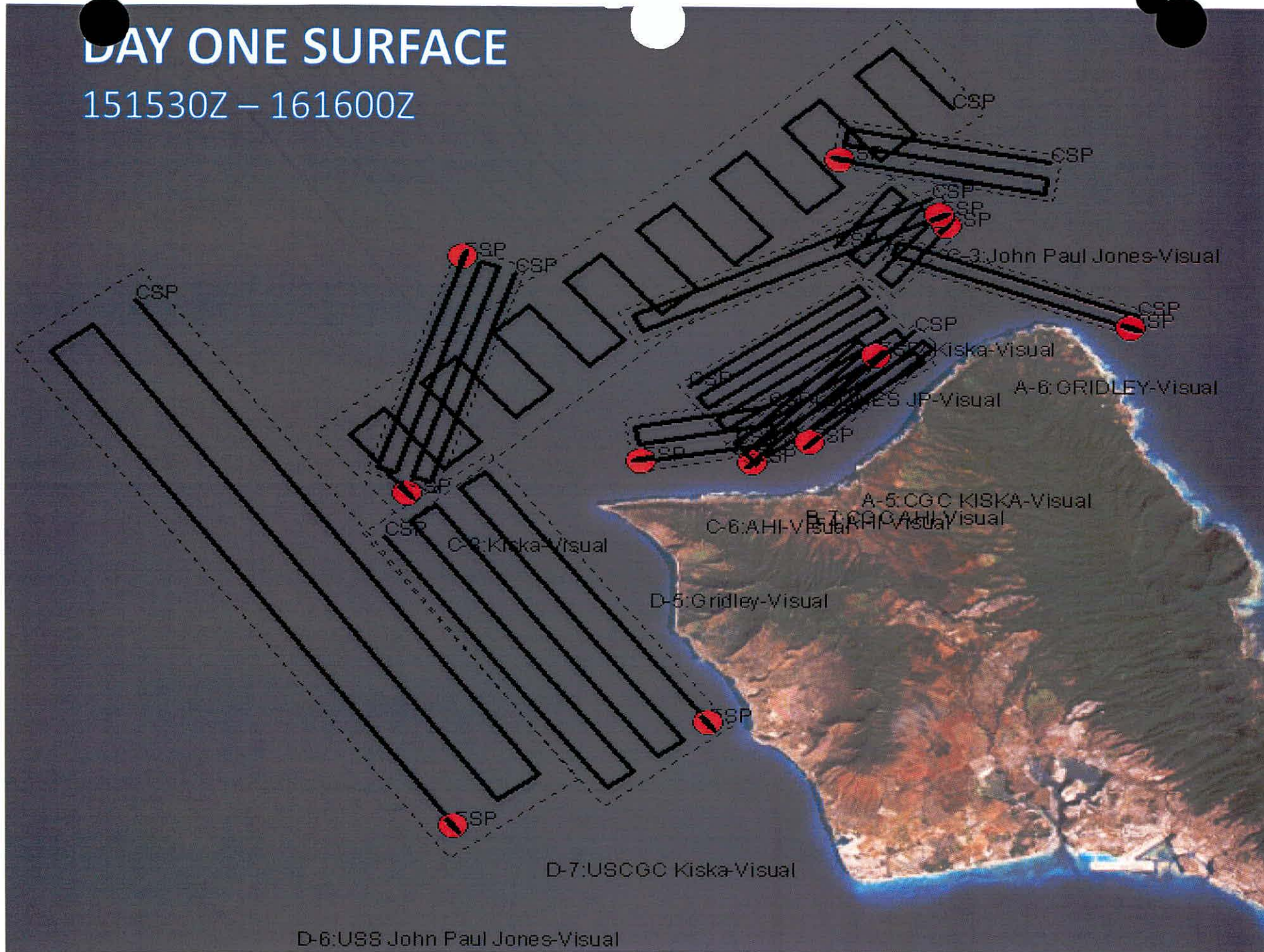


E-2 Navy P3 Bravo-Visual



# DAY ONE SURFACE

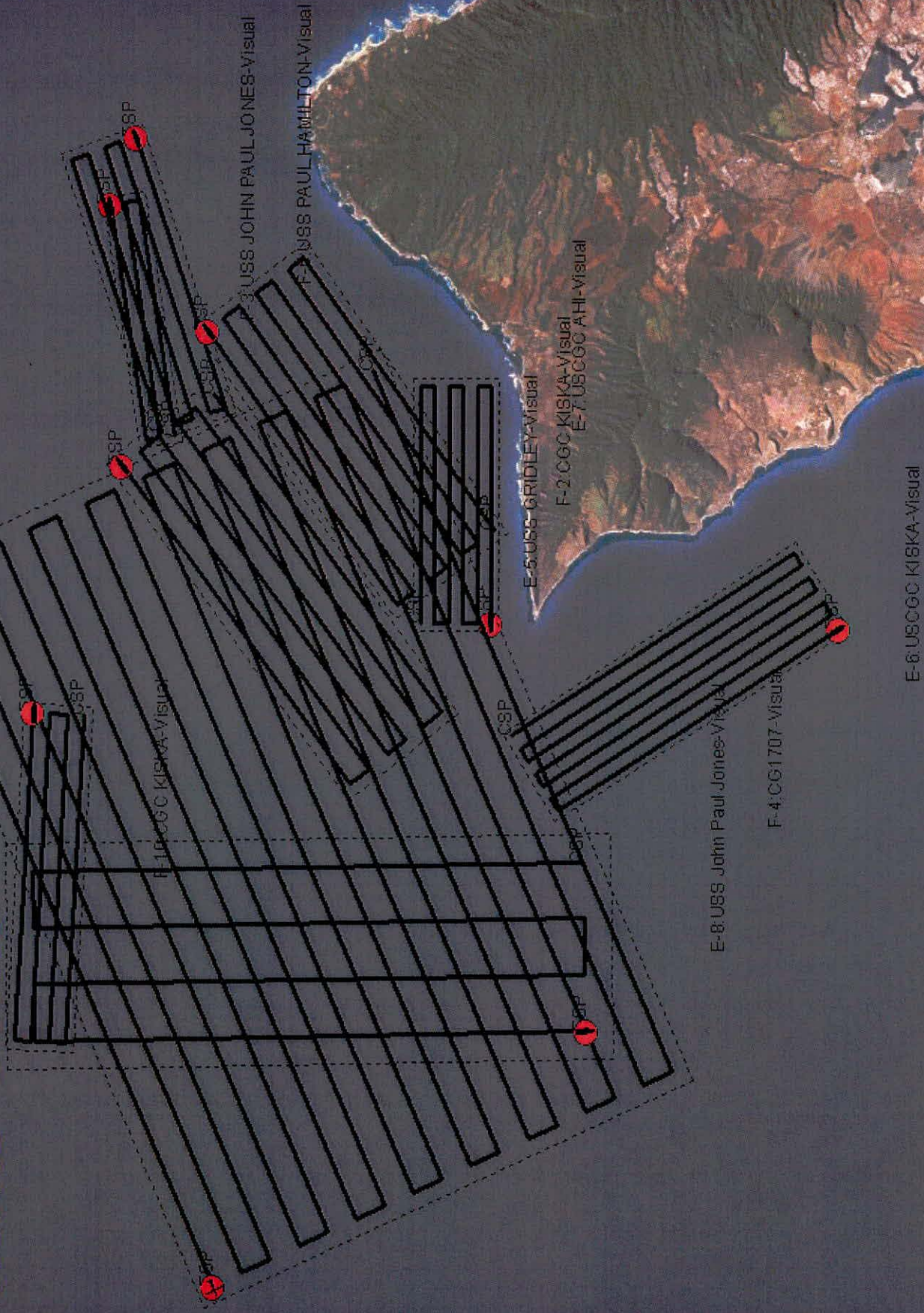
151530Z – 161600Z





161600Z - 171600Z

161600Z - 171600Z





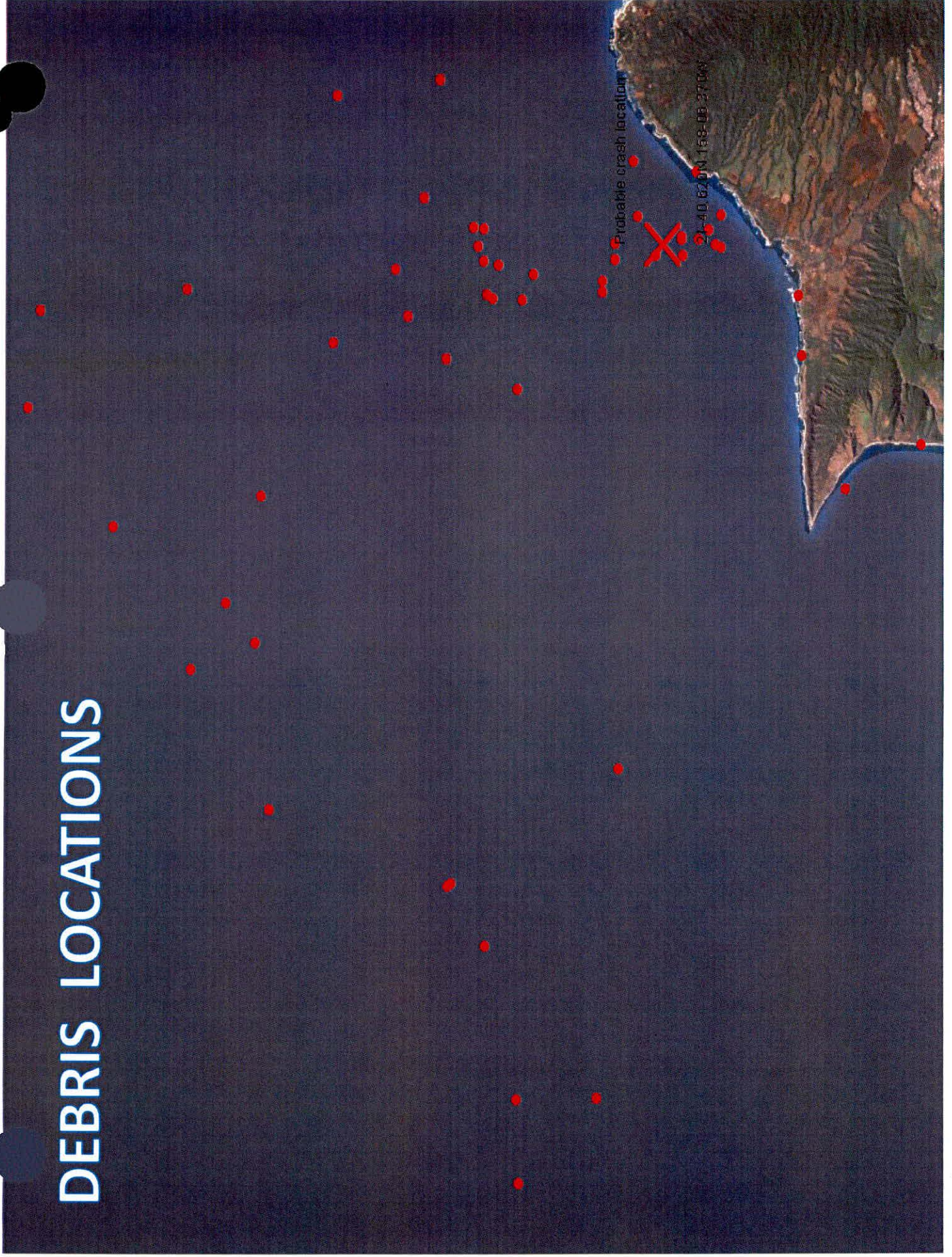








# DEBRIS LOCATIONS





## Shoreline Search Area

USMC will conduct  
another shoreline  
search on Monday,  
Jan 18th



ENCLOSURE (156)



**TOTAL SEARCH EFFORT AS OF 18 JAN @0001 (HST)**

**TOTAL AIR SORTIES: 63**

**TOTAL SURFACE SORTIES: 25**

**TOTAL AREA SEARCHED: 21005 SQ NM**

**TOTAL ASSETS UTILIZED:**

**U.S. COAST GUARD**

**U.S. NAVY**

**U.S. Army**

**USMC**

**HFD/HPD/DLNR**

**USCGC KISKA & AHI, MH-65, C-130**

**MH-60 SeaHawk, P-3 Orion, USS  
JOHN PAUL JONES, GRIDLEY, PAUL  
HAMILTON, USNS SALVOR, Navy  
MDSU**

**H-60 Blackhawk**

**Shoreline search team**

**Helicopter, Small Boat, Jet Ski**



Pages 444 through 455 redacted for the following reasons:

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# Salvage Timeline

Date	Days since Event	Activity	Significant Events
14-Jan	0	SAR	1. CH-53 crash after 2300W 14 Jan
15-Jan	1		1. SUPSALV/CPF verbal warnord, possible salvage operations
16-Jan	2		
17-Jan	3		
18-Jan	4		1. SUPSALV submits rough COA/ROM Cost Estimates for Salvage to CPF
19-Jan	5		
20-Jan	6		1. SAR suspended 2. <b>Salvage Request from MFP to CPF</b>
21-Jan	7	Shallow Salvage, Surveys, and Dive Preps	1. CONOPS Development 2. C3F directed to coordinate movement of EODGRU-2 FMGS from Key West, FL to Oahu, HI ISO USMC CH-53 salvage operations; timeline: ASAP.
22-Jan	8		1. CONOPS Development 2. Depth reported shallow based on initial ROV scans
23-Jan	9		<b>1. C3F Task to EDOGRU ONE to Execute Salvage</b> 2. FMGS arrives on island
24-Jan	10		1. MDSU equipment preps and calibrations 2. Additional MDSU divers arrive from San Diego
25-Jan	11		1. MDSU equipment onloading to SALVOR 2. MDSU pierside workup dives
26-Jan	12		1. SALVOR U/W for MDSU workup dives 2. UUV searches executed
27-Jan	13		1. MDSU workup dives on SALVOR 2. UUV operations cancelled due to weather. 3. Previous day's data analyzed shows 4 wreckage locations located deeper than 300 ft and will require more analysis

ENCLOSURE (

28-Jan	14		<ul style="list-style-type: none"> <li>1. MDSU workup dives on SALVOR</li> <li>2. UUV operations continue</li> <li>3. Some wreckage identified deeper than 300 ft</li> <li>4. SALVOR RTP</li> </ul>
29-Jan	15		1. AMB forwards list of salvage priority items to MDSU, most deeper than 300ft
30-Jan	16		1. UUV operations suspended due to weather at 1300
31-Jan	17		1. Additional UUV searches of AMB identified priority list items confirm deeper depth
1-Feb	18	Deep Salvage	<ul style="list-style-type: none"> <li>1. Received Deep Salvage Request from MFP</li> <li>2. CPF sends request to OPNAV</li> </ul>
2-Feb	19		
3-Feb	20		<ul style="list-style-type: none"> <li>1. CNO Approval Message Received</li> <li>2. SUPSALV Mobilized</li> </ul>
4-Feb	21		1. Deep Drone Shipped
5-Feb	22		
6-Feb	23		1. DeepDrone Arrival HI
7-Feb	24		
8-Feb	25		1. SALVOR onload
9-Feb	26		
10-Feb	27		
11-Feb	28		1. SALVOR U/W
12-Feb	29		1. Salvage Operations Commence
13-Feb	30		<ul style="list-style-type: none"> <li>1. Moored at 1200</li> <li>2. Recovered MGB from Wreck Site #1</li> <li>3. Recovered Tail Rotor Assembly from Wreck Site #1</li> <li>4. After dark survey of fwd fuselage</li> </ul>
14-Feb	31		<ul style="list-style-type: none"> <li>1. Recovered fwd fuselage w/HR</li> <li>2. Recovered 3 engines</li> <li>3. Recovered Tail Section, Intermediate Gearbox, and Drive Shaft</li> <li>4. Slipped moor at 2030, transit to PH</li> </ul>
15-Feb	32		1. SALVOR RTP
16-Feb	33		2. Offload wreckage





## USMC Waimea Bay Aircraft Incident 2016

### ICS 209 Incident Status Summary

This format is approved by PACAREA for situational reporting vice the SITREP template.

<b>1. Incident Name</b> USMC Waimea Bay Aircraft Incident 2016	<b>2. Operational Period (Date / Time)</b> From: 15Jan16 0800 To: 15Jan16 2000 Time of Report: 2000W	<b>INCIDENT STATUS</b> <b>SUMMARY ICS 209</b> <b>T/H -CG</b>
<b>3. Type of Incident: SAR</b>		
<b>4. Situation Summary:</b> Sector Honolulu received two reports of flare sightings IVO Waimea Bay, Oahu. Reports were correlated to two overdue USMC CH-53 aircraft with 12 Marines onboard who were conducting training in the area. JRCC initiated a CIC call, and launched ASBP MH-65 and HC-130 to investigate. HSM-37 (Easy Rider-41), Hono FD Air-1, 2 Hono FD Surface Asset, Hono PD police-1, CGC KISKA, CGC AHI, and two USN Warships have responded. Initial on scene reports indicate a large debris field centered around a life raft with no POB, metal fragments, fire on the water, and a strong fuel scent. Both helos are from Heavy Helicopter Squadron 463.		
<b>Current Operations:</b> 1534W D14 Incident Management Team in place with a liaison from Marine Air Group 24. USCG liaisons in place at the ICP in Haleiwa and at the Marine Corps Base Hawaii EOC. Surface assets to include CGC KISKA, CGC AHI, USS GRIDLEY, USS JOHN PAUL JONES, and three Ocean Safety jet skis in place and searching. USS GRIDLEY responsible for airspace management and acting as OSC with embarked CG LT from Sector Hono. Air assets including ASBP C130, ASBP H65, and USN HSM 37 in place and searching. The only two life rafts aboard the CH-53 aircraft have been recovered. One boot with human remains confirmed, recovered by the waterside search team. Request in place to PACFLT for one week of support by two Navy ships.		
<b>5. Weather Forecast:</b>  <b>NOAA Wx Service.</b>  <b>15Jan16 0800-2000:</b> Mostly cloudy w/ scattered showers. Highs around 78. Northeast winds 10 to 15 mph. Chance of rain 50 percent. Wind waves 4 ft, NW swell 16 ft.  <b>15-16Jan16 2000-0800:</b> Mostly cloudy in the evening then becoming partly cloudy. Isolated showers. Lows 58 to 65. East winds up to 10 mph in the evening becoming light. Chance of rain 20 percent. Wind waves 2 ft, NW swell 14 ft.  <b>16Jan16 0800-2000:</b>  Mostly sunny with isolated showers. Highs around 78. Light winds. Chance of rain 20 percent. Wind waves 2 ft, NW swell 10 ft.		

ENCLOSURE (160)

#### 6. Command Objectives:

1. Provide for safety and security of responders and maximize the protection of public health and welfare
2. Conduct an operational risk assessment
3. Implement Federal Aviation Administration (FAA) air space closure and monitor for compliance
4. Establish a Family Assistance program and provide joint family briefings
5. Search for and rescue persons in distress
6. Provide life-saving assistance to all persons in distress
7. Conduct joint SAR efforts and complete survivor accountability
8. Evacuate survivors to a place of safety for further medical treatment and triage and transport to hospital
9. Implement scene integrity and evidence collection, storage, and disposal
10. Develop and implement the salvage plan
11. Manage a coordinated interagency response effort that reflects the composition of a Unified Command
12. Inform the public, stakeholders, and the media of response activities
13. Establish internal resource request and external resource ordering procedures

#### Operational Period:

- 15 January 2016/ 0800 to 15 January 2016/ 2000

#### Unified Command:

- U.S. Coast Guard D14
- U.S. Marine Corps Air Group 24

#### Priorities:

- Safety of Responders & Public
- Incident stabilization & Unified Command establishment
- Security
- Information Management

#### Limitations/Constraints:

- Potential for adverse weather (strong winds, wave height)
- Critical Information handling
- Crew rest requirements
- Interagency communications/connectivity
- Evidence preservation requirements

**Command Emphasis:** For this operational period, our emphasis will be to conduct safe response operations, especially in aircraft air space de-confliction, and ensure victims processed to appropriate medical facilities.

**7. Future Plan:** Develop air tasking order and associated search action plan. Adapt search action plans on basis of debris field. Provide ICS-209 twice daily. Initiate briefs to families with USMC in am. Continue search in coordination with USMC.

#### 8. Personnel Accountability:

	Total	Unaccounted	% Accounted For
USMC CH-53 #1	6	6	0%
USMC CH-53 #2	6	6	0%
<b>Total</b>	<b>12</b>	<b>12</b>	<b>0%</b>



**9. Personnel Casualties:** (i.e. reference msg traffic. No names or ID#s)  
NSTR

**10. Type of Event:**

<input type="checkbox"/>	Oil/HAZMAT	<input type="checkbox"/>	Civil Disturbance	<input checked="" type="checkbox"/>	SAR/LE
<input type="checkbox"/>	Marine Disaster	<input type="checkbox"/>	Military Out load	<input type="checkbox"/>	Other: Heavy Weather

**11. Critical Resource Status:**

CG WPB '87	CGC AHI U/W
CG WPB '110	CGC KISKA U/W
USN DDG	USS JOHN PAUL JONES U/W
USN DDG	USS GRIDLEY U/W
USN Helo	HMS 37 Operational
CG HH-65	CG Rescue 6547 Operational
CG C-130	CG Rescue 1719, 1707 Operational

**Personnel**

USCG - 45

USMC - 3

HFD - TBD

Total - TBD

**12. Sorties/Patrols Summary: (list of sorties since last report)**

**Air:**

Number of Sorties/Patrols	14
Area Covered (square nautical miles)	649 SQ. NM

**Surface:**

Number of Sorties/Patrols	4
Area Covered (square nautical miles)	64 SQ. NM

Joint SAR Plan POS

31%

**13. Operational Controls Summary**

**Currently in Force:**

Safety Zone around debris field

Temporary Flight Restriction in search area

**14. HAZMAT/Oil Status**

- Estimate 900 gals of JP-8 per aircraft onboard at time of incident
- NOAA oil fate analysis estimates 90% of fuel evaporated or naturally dispersed w/in 6-12 hrs from being released.
- Reports of oil impact to land were investigated. Investigators arrived on-scene with reporting party and were unable to validate reports

**15. Critical Resource Status:**

All critical resources operational.

**16. Critical Resource Status: Communications (significant damage and/or impact):**  
NSTR

**17. Prepared by:**

(b)(6) (b) (3) 10 USC § 130b

**18. Unified Command Approval:**

(b)(6) (b) (3) 10 USC § 130b

(b)(6) (b) (3) 10 USC § 130b



## USMC Waimea Bay Aircraft Incident 2016

### ICS 209 Incident Status Summary 04

This format is approved by PACAREA for situational reporting vice the SITREP template.

<b>1. Incident Name</b> USMC Waimea Bay Aircraft Incident 2016	<b>2. Operational Period (Date / Time)</b> From: 16Jan16 2000 To: 17Jan16 2000 Time of Report: 1700W	<b>INCIDENT STATUS</b> <b>SUMMARY ICS 209</b> <b>T/H -CG</b>
<b>3. Type of Incident: SAR</b>		
<b>4. Situation Summary:</b> Sector Honolulu received two reports of flare sightings in the vicinity Waimea Bay, Oahu. Reports were correlated to two overdue USMC CH-53 aircraft with 12 Marines onboard who were conducting training in the area. JRCC initiated a CIC (Critical Information Call) call, and launched ASBP MH-65 and HC-130 to investigate; HSM-37 (Easy Rider-41), Honolulu FD Air-1, 2 Honolulu FD Surface Asset, Honolulu PD Police-1, CGC KISKA, CGC AHI, and two USN Warships responded. Initial on-scene reports indicated a large debris field centered around a life raft with no POB, metal fragments, fire on the water, and a strong fuel scent. Both helicopters involved in the incident are from Heavy Helicopter Squadron 463.		
<b>Current Operations:</b> <p><b>1900W 16Jan16</b> - Unified Command (CG/USMC) provided second briefing to local families on search efforts, status and dedicated resources at the Kaneohe Marine Corps Base Hawaii Chapel. USCG liaisons remained in place at the ICP in Haleiwa and at the Marine Corps Base Hawaii EOC. Surface assets on-scene include CGC KISKA and USS PAUL HAMILTON. USS PAUL HAMILTON responsible for airspace management and acting as OSC (On-Scene Commander). USCG liaison, LT Nick Spence, will arrive onboard morning of 17Jan16. Air assets on-scene include USCG C-130, MH-65 from 0000-0800 and U.S Army H-60 until 0000W 17Jan16. 2100W ICP at Haleiwa, HI with Honolulu Fire Department, Ocean Safety, and Honolulu Police Department secured 0630W until 17Jan16 from shoreline searches.</p> <p><b>0700W 17Jan16</b> - Search efforts continued throughout evening with air and surface assets. Air assets on-scene actively searching include USAF P-3, U.S. Army HH-60, USCG MH-65. Surface assets on-scene to include CGC KISKA, USS PAUL HAMILTON, and Ocean Safety jet skis. (b) (3) 10 USC deployed to USS PAUL HAMILTON as LNO. USMC requested and PACFLT approved USNS SALVOR for searching for aircraft and personnel in vicinity of crash site. USNS SALVOR with Mobile Diving and Salvage Unit 1 (MDSU-1) will deploy with Remote Operated Vehicle (ROV) and side scan sonar in support of SAR effort. USNS SALVOR will depart Pearl Harbor at 1330W with an ETA to the LKP at 2330W and serve as a support platform to MDSU-1. MDSU-1 will trailer and launch one (7) meter rigid hull inflatable boat and one 27FT Whaler from Haleiwa small boat harbor with ROV and side scan sonar at approximately 1300W-1400W 17Jan. A Coast Guard Diver (West Coast Dive Locker) will accompany MDSU-1 as a liaison to make continuous reports back to the ICP. Before launching, extensive ORM discussion will occur with the Coast Guard LNO in Haleiwa, and Unified Command will make the decision to launch based on risk assessment. CG LNO at ICP in Haleiwa continues to provide D14 ICP updates on shoreline and shore side search efforts. USMC continues to lead shore side branch, salvage, and investigation groups with HPD and HFD support. Unified Command continues to authorize boating traffic through safety zone. MSST Honolulu again deployed two members to Haleiwa small boat harbor to educate boating public including numbers to make debris reports and/or any signs of distress. Approximately 55 Marines combing beaches from Kaena Point to Turtle Bay Golf course from first light through the afternoon. HFD will have an aircraft on-scene at 0845W 17Jan to fly Turtle Bay to Kaena Point with a fly over Peanut Island. HPD will have 4-5 officers to provide escort to Marines. Ocean Safety will have 2 jet skis with 4 pax on-scene at 0815W ready for direction from USMC. Department Land &amp; Natural Resources will have 3 people at Kaena Pt to conduct additional shore searches.</p> <p><b>1700W 17Jan16-</b>          MDSU-1 vessels conducted search efforts with ROV and side scan sonar. Side scan sonar deemed ineffective as water depth was greater than 250FT. Water depth averaging 330FT in search location. Conducted search patterns with ROV with negative results thus far. Will complete searches prior to sunset. Confirmed three life rafts currently recovered. 01 on Friday by HFD, 01 on Saturday by CGC AHI and 01 today by CGC KISKA. All life rafts match the</p>		

USMC maintenance records. One life raft remains unaccounted for.

#### **5. Weather Forecast:**

##### **NOAA WX Service:**

**17Jan16 0342 (HST)**

...Small craft advisory in effect through tonight...

##### **Tonight:**

Mostly clear, with a low around 61. Winds variable less than 10 kt. Wind waves 2 ft or less. North swell 8 ft.

##### **Monday:**

Mostly sunny, with a high near 77. Winds variable less than 10 kt. Wind waves 2 ft or less. North swell 8 ft.

##### **Monday Night:**

Partly cloudy, with a low around 62. Winds variable less than 10 kt. Wind waves 2 ft or less. North swell 8 ft.

##### **Tuesday:**

Isolated showers after noon. Mostly sunny, with a high near 78. Chance of precipitation is 20%. Winds variable less than 10 kt becoming northwest 10 kt in the afternoon. Wind waves 2 ft or less. North swell 7 ft.

#### **6. Command Objectives:**

- Provide for the safety and security of responders and maximize protection of public
- Conduct joint SAR efforts to include air space de-confliction, survival accountability, and life-saving assistance, evacuation, and triage of survivors
- Continue ongoing Family Assistance and responder programs to include joint family briefings and Critical Incident Stress Management (CISM) support
- Implement scene integrity and coordinate debris containment for incident investigation purposes
- Request resource assistance and develop assessment plan to identify aircraft location to support SAR efforts
- Develop transition plan from SAR to Salvage phases
- Manage Unified Command response efforts and ensure IMT relief schedules
- Inform the public, stakeholders, and the media of response activities

##### **Operational Period:**

- 16 January 2016/ 2000 to 17 January 2016/ 2000

##### **Unified Command:**

- U.S. Coast Guard D14
- U.S. Marine Corps Air Group 24

##### **Priorities:**

- Safety of Responders & Public
- Incident stabilization & Unified Command establishment
- Security
- Information Management

##### **Limitations/Constraints:**

- Potential for adverse weather (strong winds, wave height)
- Critical Information handling
- Crew rest requirements



- Interagency communications/connectivity
- Evidence preservation requirements

**Command Emphasis:** For this operational period, our continued emphasis will be to conduct safe response operations, especially in aircraft air space de-confliction. IC shall be immediately notified of any mishaps, injuries to responders, discoveries or sightings (debris or other), or major asset coverage gaps. Objectives and strategies supporting shift from Search and Rescue to Search and Recovery are under development.

#### 7. Future Plan:

Execute air tasking order and associated search action plan for 18Jan16. Adapt search action plans on basis of debris found. Provide ICS-209 once daily. Family brief to be conducted by USCG/USMC Unified Command at 1900W daily. Continue search in coordination with USMC.

ICP will continue to DIRLAUTH with USNS SALVOR and MDSU-1 in support of SAR operations as necessary.

#### 8. Personnel Accountability:

	Total	Unaccounted	% Accounted For
USMC CH-53 #1	6	6	0%
USMC CH-53 #2	6	6	0%
<b>Total</b>	<b>12</b>	<b>12</b>	<b>0%</b>

#### 9. Personnel Casualties: (i.e. reference msg traffic. No names or ID#'s)

NSTR

#### 10. Type of Event:

<input type="checkbox"/> Oil/HAZMAT	<input type="checkbox"/> Civil Disturbance	<input checked="" type="checkbox"/> SAR/LE
<input type="checkbox"/> Marine Disaster	<input type="checkbox"/> Military Out load	<input type="checkbox"/> Other: Heavy Weather

#### 11. Critical Resource Status:

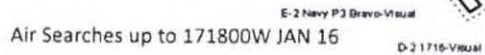
CG WPB '110	CGC KISKA U/W
USN DDG	USS PAUL HAMILTON, U/W
CG MH-65	CG Rescue 6547 Operational
CG C-130	CG Rescue 1719, 1707 Operational
Army H-60	
Navy H60	
USNS SALVOR	
MDSU-1	
<b>D14 Command Post</b>	USCG - 66
	USMC - 1
	HFD - 0
	HPD - 0
	Total - 67

#### 12. Sorties/Patrols Summary: (\*\*\*\*list of sorties since last report\*\*\*\*)

<b>Air:</b>	
Number of Sorties/Patrols	14
Area Covered (square nautical miles)	2,624 SQ. NM
<b>Surface:</b>	
Number of Sorties/Patrols	4
Area Covered (square nautical miles)	806 SQ. NM

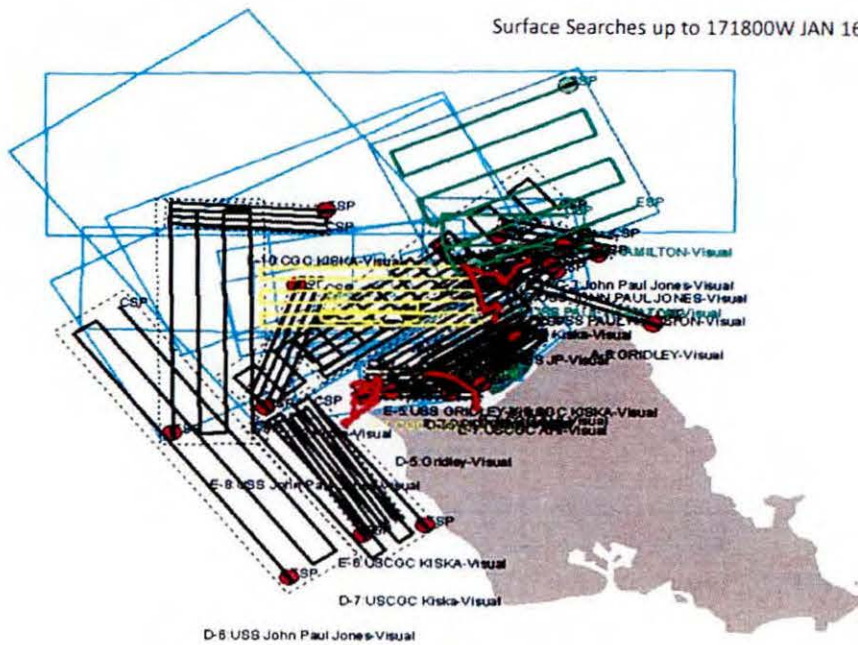
Cumulative Sorties	78
Cumulative Area covered	16,072 SQ. NM
Cumulative Joint SAR Plan POS	75%
<b>13. Operational Controls Summary</b>	
<b>Currently in Force:</b>	
Safety Zone around debris field	
Temporary Flight Restriction in search area	
<b>14. HAZMAT/Oil Status</b>	
-Estimate 900 gals of JP-8 per aircraft onboard at time of incident -NOAA oil fate analysis estimates 90% of fuel evaporated or naturally dispersed w/in 6-12 hrs from being released. -Reports of oil impact to land were investigated. Investigators arrived on-scene with reporting party and could not locate any impacted shoreline; report of oil impact deemed inaccurate.	
<b>15. Critical Resource Status:</b>	
All critical resources operational.	
<b>16. Critical Resource Status: Communications (significant damage and/or impact):</b>	
NSTR	
<b>17. Prepared by:</b>	
(b)(6) (b) (3) 10 USC § 130b	
<b>18. Unified Command Approval:</b>	
(b)(6) (b) (3) 10 USC § 130b	(b)(6) (b) (3) 10 USC § 130b

## CUMULATIVE AIR SEARCH EFFORTS



### CUMULATIVE SURFACE SEARCH EFFORTS

Surface Searches up to 171800W JAN 16





**AL Dineer**

## USMC Waimea Bay Aircraft Incident 2016

### ICS 209 Incident Status Summary

This format is approved by PACAREA for situational reporting vice the SITREP template.

<b>1. Incident Name</b> USMC Waimea Bay Aircraft Incident 2016	<b>2. Operational Period (Date / Time)</b> From: 15Jan16 0800    To: 15Jan16 2000 Time of Report: 2000W	<b>INCIDENT STATUS</b> <b>SUMMARY ICS 209</b> <b>T/H -CG</b>
<b>3. Type of Incident: SAR</b>		
<b>4. Situation Summary:</b> Sector Honolulu received two reports of flare sightings IVO Waimea Bay, Oahu. Reports were correlated to two overdue USMC CH-53 aircraft with 12 Marines onboard who were conducting training in the area. JRCC initiated a CIC call, and launched ASBP MH-65 and HC-130 to investigate. HSM-37 (Easy Rider-41), Hono FD Air-1, 2 Hono FD Surface Asset, Hono PD police-1, CGC KISKA, CGC AHI, and two USN Warships have responded. Initial on scene reports indicate a large debris field centered around a life raft with no POB, metal fragments, fire on the water, and a strong fuel scent. Both helos are from Heavy Helicopter Squadron 463.		
<b>Current Operations:</b> 1534W D14 Incident Management Team in place with a liaison from Marine Air Group 24. USCG liaisons in place at the ICP in Haleiwa and at the Marine Corps Base Hawaii EOC. Surface assets to include CGC KISKA, CGC AHI, USS GRIDLEY, USS JOHN PAUL JONES, and three Ocean Safety jet skis in place and searching. USS GRIDLEY responsible for airspace management and acting as OSC with embarked CG LT from Sector Hono. Air assets including ASBP C130, ASBP H65, and USN HSM 37 in place and searching. The only two life rafts aboard the CH-53 aircraft have been recovered. One boot with human remains confirmed, recovered by the waterside search team. Request in place to PACFLT for one week of support by two Navy ships.		
<b>5. Weather Forecast:</b>  <b>NOAA Wx Service.</b>  <b>15Jan16 0800-2000:</b> Mostly cloudy w/ scattered showers. Highs around 78. Northeast winds 10 to 15 mph. Chance of rain 50 percent. Wind waves 4 ft, NW swell 16 ft.  <b>15-16Jan16 2000-0800:</b> Mostly cloudy in the evening then becoming partly cloudy. Isolated showers. Lows 58 to 65. East winds up to 10 mph in the evening becoming light. Chance of rain 20 percent. Wind waves 2 ft., NW swell 14 ft.  <b>16Jan16 0800-2000:</b>  Mostly sunny with isolated showers. Highs around 78. Light winds. Chance of rain 20 percent. Wind waves 2 ft., NW swell 10 ft.		



#### 6. Command Objectives:

1. Provide for safety and security of responders and maximize the protection of public health and welfare
2. Conduct an operational risk assessment
3. Implement Federal Aviation Administration (FAA) air space closure and monitor for compliance
4. Establish a Family Assistance program and provide joint family briefings
5. Search for and rescue persons in distress
6. Provide life-saving assistance to all persons in distress
7. Conduct joint SAR efforts and complete survivor accountability
8. Evacuate survivors to a place of safety for further medical treatment and triage and transport to hospital
9. Implement scene integrity and evidence collection, storage, and disposal
10. Develop and implement the salvage plan
11. Manage a coordinated interagency response effort that reflects the composition of a Unified Command
12. Inform the public, stakeholders, and the media of response activities
13. Establish internal resource request and external resource ordering procedures

#### Operational Period:

- 15 January 2016/ 0800 to 15 January 2016/ 2000

#### Unified Command:

- U.S. Coast Guard D14
- U.S. Marine Corps Air Group 24

#### Priorities:

- Safety of Responders & Public
- Incident stabilization & Unified Command establishment
- Security
- Information Management

#### Limitations/Constraints:

- Potential for adverse weather (strong winds, wave height)
- Critical Information handling
- Crew rest requirements
- Interagency communications/connectivity
- Evidence preservation requirements

**Command Emphasis:** For this operational period, our emphasis will be to conduct safe response operations, especially in aircraft air space de-confliction, and ensure victims processed to appropriate medical facilities.

**7. Future Plan:** Develop air tasking order and associated search action plan. Adapt search action plans on basis of debris field. Provide ICS-209 twice daily. Initiate briefs to families with USMC in am. Continue search in coordination with USMC.

#### 8. Personnel Accountability:

	Total	Unaccounted	% Accounted For
USMC CH-53 #1	6	6	0%
USMC CH-53 #2	6	6	0%
<b>Total</b>	<b>12</b>	<b>12</b>	<b>0%</b>

**9. Personnel Casualties:** (i.e. reference msg traffic. No names or ID#'s)  
NSTR

**10. Type of Event:**

<input type="checkbox"/> Oil/HAZMAT	<input type="checkbox"/> Civil Disturbance	<input checked="" type="checkbox"/> SAR/LE
<input type="checkbox"/> Marine Disaster	<input type="checkbox"/> Military Out load	<input type="checkbox"/> Other: Heavy Weather

**11. Critical Resource Status:**

CG WPB '87	CGC AHI U/W
CG WPB '110	CGC KISKA U/W
USN DDG	USS JOHN PAUL JONES U/W
USN DDG	USS GRIDLEY U/W
USN Helo	HMS 37 Operational
CG HH-65	CG Rescue 6547 Operational
CG C-130	CG Rescue 1719, 1707 Operational

<b>Personnel</b>	USCG - 45
	USMC - 3
	HFD - TBD
	Total - TBD

**12. Sorties/Patrols Summary: (list of sorties since last report)**

**Air:**

Number of Sorties/Patrols	14
Area Covered (square nautical miles)	649 SQ. NM

**Surface:**

Number of Sorties/Patrols	4
Area Covered (square nautical miles)	64 SQ. NM

Joint SAR Plan POS	31%
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**13. Operational Controls Summary**

**Currently in Force:**

Safety Zone around debris field	
Temporary Flight Restriction in search area	

**14. HAZMAT/Oil Status**

-Estimate 900 gals of JP-8 per aircraft onboard at time of incident  
-NOAA oil fate analysis estimates 90% of fuel evaporated or naturally dispersed w/in 6-12 hrs from being released.  
-Reports of oil impact to land were investigated. Investigators arrived on-scene with reporting party and were unable to validate reports.

**15. Critical Resource Status:**

All critical resources operational.

**16. Critical Resource Status: Communications (significant damage and/or impact):**  
NSTR

**17. Prepared by:**

(b)(6) (b) (3) 10 USC § 130b

**18. Unified Command Approval:**

(b)(6) (b) (3) 10 USC § 130b

(b)(6) (b) (3) 10 USC § 130b



## USMC Waimea Bay Aircraft Incident 2016

### ICS 209 Incident Status Summary 05

This format is approved by PACAREA for situational reporting vice the SITREP template.

<b>1. Incident Name</b> USMC Waimea Bay Aircraft Incident 2016	<b>2. Operational Period (Date / Time)</b> From: 17Jan16 2000 To: 18Jan16 2000 Time of Report: 1800W	<b>INCIDENT STATUS</b> <b>SUMMARY ICS 209</b> <b>T/H -CG</b>
<b>3. Type of Incident: SAR</b>		
<b>4. Situation Summary:</b> Sector Honolulu received two reports of flare sightings in the vicinity Waimea Bay, Oahu. Reports were correlated to two overdue USMC CH-53 aircraft with 12 Marines onboard who were conducting training in the area. JRCC initiated a CIC (Critical Information Call) call, and launched ASBP MH-65 and HC-130 to investigate; HSM-37 (Easy Rider-41), Honolulu FD Air-1, 2 Honolulu FD Surface Asset, Honolulu PD Police-1, CGC KISKA, CGC AHI, and two USN Warships responded. Initial on-scene reports indicated a large debris field centered around a life raft with no POB, metal fragments, fire on the water, and a strong fuel scent. Both helicopters involved in the incident are from Heavy Helicopter Squadron 463.		
<b>Current Operations:</b> <b>2000W 17Jan16</b> - Unified Command (CG/USMC) provided third briefing to local families on search efforts, status and dedicated resources at the Kaneohe Marine Corps Base Hawaii Chapel. USCG liaisons remained in place at the ICP in Haleiwa and at the Marine Corps Base Hawaii EOC. Surface assets on-scene include: CGC KISKA and USS PAUL HAMILTON. USS PAUL HAMILTON responsible for airspace management and acting as OSC (On-Scene Commander). Air assets on-scene include: USCG C-130, MH-65 from 0000-0800W, and U.S Army H-60 until 0000W 18Jan. At 2100W, ICP at Haleiwa, HI with Honolulu Fire Department, Ocean Safety, and Honolulu Police Department secured until 0630W 18Jan from shoreline searches. At 1830W 17Jan, a recreational boater spotted a life raft 2.5NM Northwest of Kahuku point consistent with last unaccounted for life raft from the CH-53 aircraft. Pictures taken showed life raft partially inflated with no signs of missing persons. Currently, air/surface assets attempted to relocate and recover.		
<b>0500W 18Jan16</b> - Search efforts continued throughout evening with air and surface assets. Air assets on-scene actively searching includes USCG C-130, USCG MH-65 and Navy P-3. Surface assets on-scene includes CGC KISKA and USS PAUL HAMILTON (On-Scene Commander). USNS SALVOR arrived on-scene LKP at 2330W 17Jan and will serve as a support platform to the Navy Marine Dive Support Unit One (MDSU-1). MDSU-1 intends to deploy from Haleiwa Harbor at 0830W in attempts to locate wreckage. A Coast Guard Diver (West Coast Dive Locker) will continue to accompany MDSU-1 as a liaison to make continuous reports back to the ICP. CG LNO at ICP in Haleiwa continues to provide D14 ICP updates on shoreline and shore side search efforts. USMC continues to lead shore side branch, salvage, and investigation groups with HPD and HFD support.		
<b>1500W 18Jan16</b> - Governor of Hawaii and Mayor of Honolulu visited the ICP in Haleiwa between 0900-1300W 18Jan. USMC/USCG provided update on ongoing operations. At 1000W 18Jan, shoreside team located a 8-10FT section suspected to be tail section of a helicopter in the surf zone in the vicinity of Kaena Pt. Ocean Safety jet skis and shoreside teams determining if they can recover. At 1117W 18Jan MDSU-1 located 02 small pieces of aircraft debris on the ocean floor approximately 100 yards from LKP provided by ICP. At 1132W 18Jan MDSU-1 received a "ping from a locator" on their hand held sonar. At 1143W a partially inflated life raft was located approximately 03NM North of Kahuku Pt. CGC KISKA diverted, located, and recovered liferaft at 1300W 18Jan. 1420W serial number confirmed. All (04) liferafts known to be on helos have now been accounted for. The MDSU-1 reported seeing what looked like a "rib" of the fuselage that is no more than 10FT by 5FT with debris around it. The ROV typically operates in scanning mode as recording reduces the scanning ability of the ROV. The "rib" was located in scanning mode and the ROV had a mechanical malfunction prior to switching to record mode, so no video was captured. MDSU-1 still reports picking up two separate pings from the location. MDSU-1 will resume operations on 19Jan with backup ROV. CGC KISKA released from case due to low fuel and supplies.		

## **5. Weather Forecast:**

### **NOAA WX Service:**

18 Jan16 @ 0927 (HST)

...High Surf Advisory until 1800HST 18 January 2016...

### **Rest Of Today:**

Sunny, with a temperature falling to around 72 by 5pm. Winds variable less than 10 kt. Wind waves 2 ft or less. North swell 8 ft.

### **Tonight:**

Mostly clear, with a low around 59. East winds 10 kt in the evening becoming variable less than 10 kt. Wind waves 3 ft in the evening then 2 ft or less. North swell 8 ft.

### **Tuesday:**

Sunny, with a high near 78. Northwest winds 10 kt. Wind waves 2 ft or less. North swell 7 ft.

### **Tuesday Night:**

Scattered showers after midnight. Partly cloudy, with a low around 60. Chance of precipitation is 30%. New precipitation amounts of less than a tenth of an inch possible. Northwest winds 10 kt in the evening becoming variable less than 10 kt. Wind waves 2 ft or less then 3 ft after midnight. North swell 7 ft increasing to northwest 13 ft. Scattered showers after midnight.

## **6. Command Objectives:**

- Provide for the safety and security of responders and maximize protection of public
- Conduct joint SAR efforts to include air space de-confliction, survival accountability, and life-saving assistance, evacuation, and triage of survivors
- Continue ongoing Family Assistance and responder programs to include joint family briefings and Critical Incident Stress Management (CISM) support
- Implement scene integrity and coordinate debris containment for incident investigation purposes
- Request resource assistance and develop assessment plan to identify aircraft location to support SAR efforts
- Develop transition plan from SAR to Salvage phases
- Manage Unified Command response efforts and ensure IMT relief schedules
- Inform the public, stakeholders, and the media of response activities

### **Operational Period:**

- 17 January 2016/ 2000 to 18 January 2016/ 2000

### **Unified Command:**

- U.S. Coast Guard D14
- U.S. Marine Corps Air Group 24

### **Priorities:**

- Safety of Responders & Public
- Incident stabilization & Unified Command establishment
- Security
- Information Management

### **Limitations/Constraints:**

- Potential for adverse weather (strong winds, wave height)



- Critical Information handling
- Crew rest requirements
- Interagency communications/connectivity
- Evidence preservation requirements

**Command Emphasis:** For this operational period, our continued emphasis will be to conduct safe response operations, especially in aircraft air space de-confliction. IC shall be immediately notified of any mishaps, injuries to responders, discoveries or sightings (debris or other), or major asset coverage gaps. Objectives and strategies supporting shift from Search and Rescue to Search and Recovery are under development.

#### 7. Future Plan:

Execute air tasking order and associated search action plan for 18Jan16. Adapt search action plans on basis of debris found. Provide ICS-209 once daily. Family brief to be conducted by USCG/USMC Unified Command at 1900W daily. Continue search in coordination with USMC.

ICP will continue to DIRLAUTH with USNS SALVOR and MDSU-1 in support of SAR operations as necessary.

UC planning transition from SAR to salvage recovery in near future. Anticipate providing active search suspension briefings to families dependent on emerging information. After transition, USMC will have full TACON of USNS SALVOR and MDSU-1 for search and salvage operations. USCG support will include modification and management of Safety Zones, facilitate FAA removal of TFR, demobilization of USCG assets and command post, and potential other support if requested.

#### 8. Personnel Accountability:

	Total	Unaccounted	% Accounted For
USMC CH-53 #1	6	6	0%
USMC CH-53 #2	6	6	0%
Total	12	12	0%

9. Personnel Casualties: (i.e. reference msg traffic. No names or ID#'s)  
NSTR

#### 10. Type of Event:

<input type="checkbox"/> Oil/HAZMAT	<input type="checkbox"/> Civil Disturbance	<input checked="" type="checkbox"/> SAR/LE
<input type="checkbox"/> Marine Disaster	<input type="checkbox"/> Military Out load	<input type="checkbox"/> Other: Heavy Weather

#### 11. Critical Resource Status:

CG WPB '110	CGC KISKA U/W
USN DDG	USS PAUL HAMILTON, U/W
CG MH-65	CG Rescue 6547 Operational
CG C-130	CG Rescue 1719 Operational
USN P-3	P-3 Operational
Army H-60	
Navy H60	
USNS SALVOR	USNS SALVOR, U/W
MDSU-1	
D14 Command Post	USCG AD - 63
	USCG RSV-02
	USCG AUX - 04
	USCG Civilians- 03
	USMC - 02



	HFD - 00
	HPD - 00
	Total -74

**12. Sorties/Patrols Summary: (\*\*\*\*list of sorties since last report\*\*\*\*)**
**Air:**

Number of Sorties/Patrols

11

Area Covered (square nautical miles)

5,884 SQ. NM

**Surface:**

Number of Sorties/Patrols

4

Area Covered (square nautical miles)

168 SQ. NM

Cumulative Sorties

102

Cumulative Area covered

26,457 SQ. NM

Cumulative Joint SAR Plan POS

85%

**13. Operational Controls Summary**
**Currently in Force:**

Safety Zone around debris field

Temporary Flight Restriction in search area

**14. HAZMAT/Oil Status**

-Estimate 900 gals of JP-8 per aircraft onboard at time of incident

-NOAA oil fate analysis estimates 90% of fuel evaporated or naturally dispersed w/in 6-12 hrs from being released.

-Reports of oil impact to land were investigated. Investigators arrived on-scene with reporting party and could not locate any impacted shoreline; report of oil impact deemed inaccurate.

**15. Critical Resource Status:**

All critical resources operational.

**16. Critical Resource Status: Communications (significant damage and/or impact):**

NSTR

**17. Prepared by:**

(b)(6) (b) (3) 10 USC § 130b

**18. Unfiled Command Approval:**

(b)(6) (b) (3) 10 USC § 130b

(b)(6) (b) (3) 10 USC § 130b

## DAY FOUR AIR SEARCH

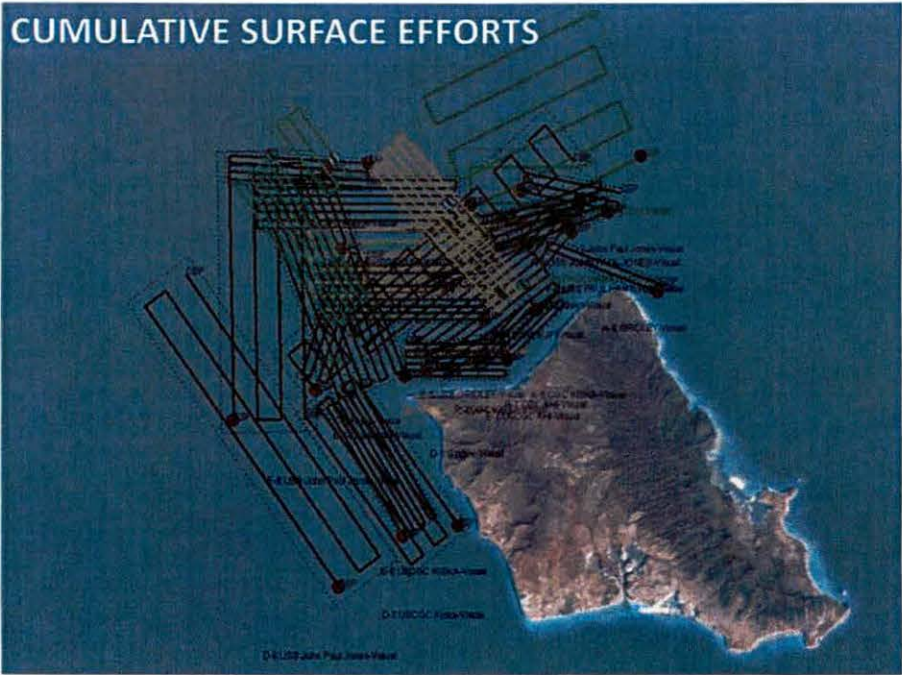
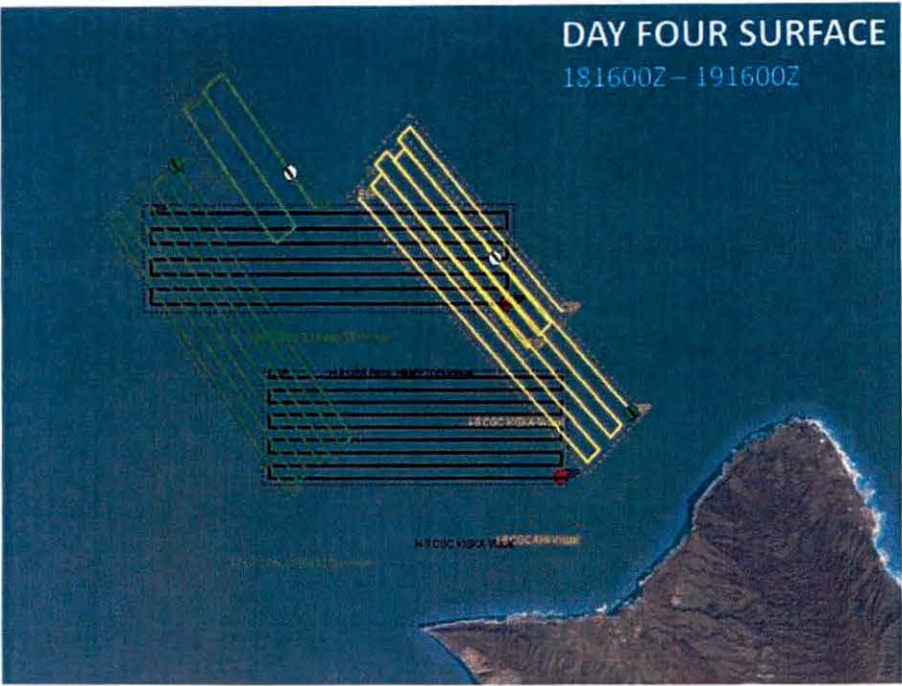
181600Z - 191600Z



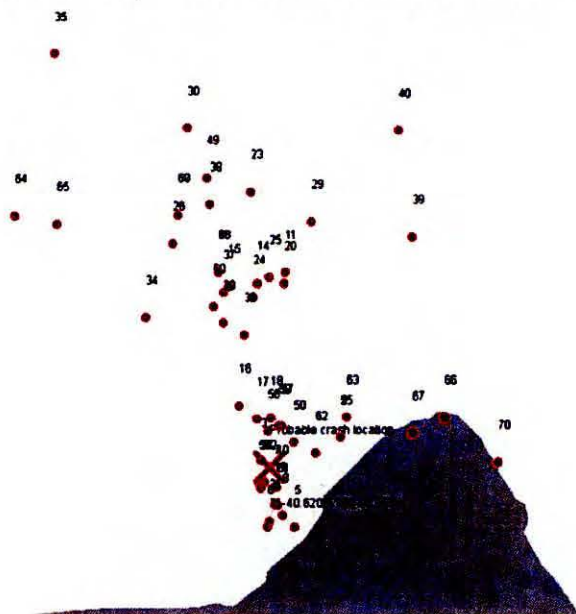
## CUMULATIVE AIR SEARCH







# Debris Reports as of 2200Z 18 JAN2016





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ENCLOSURE (16)

# Search, Recovery, and Salvage Update

**AMB Non-Privileged Summary**

**04 Apr 2016**

(b)(6) (b) (3) 10 USC § 130b

**Senior Member HMH-463 AMB**

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UNCLASSIFIED / FOUO

# HMMH-463 Search/Recovery Effort

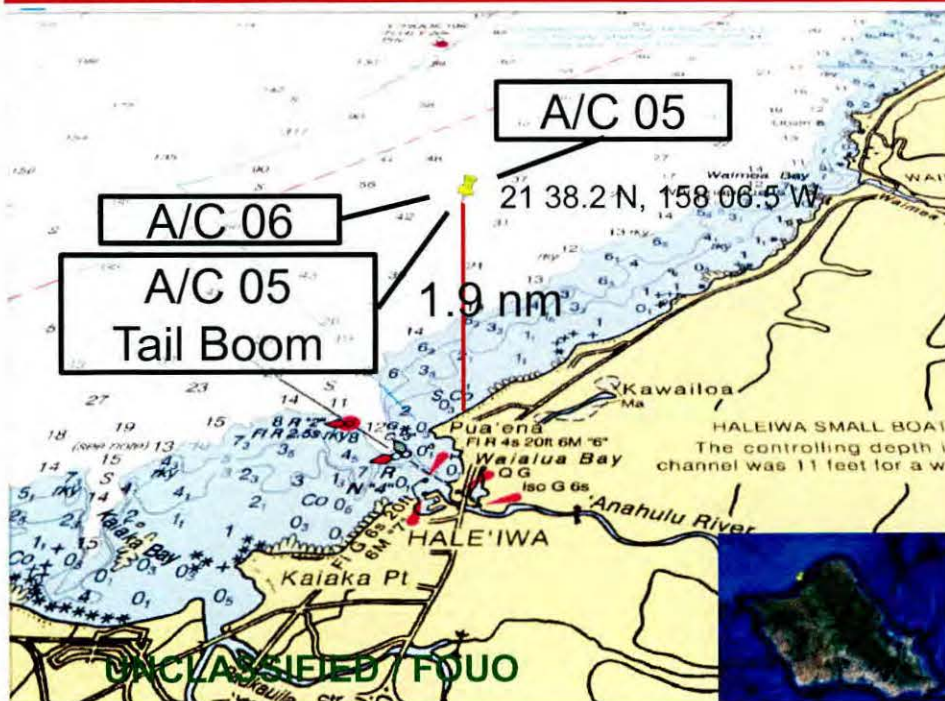
## AMB Non-Privileged Summary

04 Apr 2016



### Orientation:

- 3 debris fields located within ~ 150 m of the center grid.
- All items, except one partial blade, are located deeper than 300'.
- The Deep Drone 8000, USNS Salvor, and MDSU-1 provided by NAVSEA and C3F have recovered the majority of the large sections of interest and HR from both Mishap A/C leading to the positive DNA identification of 9 aircrew and 2 additional aircrew (11 of 12) via flight equipment. We are reasonably sure of what happened, but are awaiting the results from multiple Engineering Investigations to determine/eliminate multiple possible causal (why) factors for the midair.



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- BLUF:** Every priority item previously identified via underwater photo is recovered. The primary focus has shifted to recovery. 9 Marines have been identified via DNA. 2 of the remaining 3 have been identified via serialized flight equipment.
- We completed a search (1-2 April) of site 028 associated with PS32. This is the aircraft our last unidentified Marine was on. We recovered several items of debris we suspected of containing HR, but nothing containing DNA was recovered. We recovered one item of clothing (men's boxer shorts). The expanded search area discovered nothing significant for this report.
  - All items at site 028 were either retrieved or stacked underwater following a full search by the team. This included sifting through the sand IVO the items.
  - An expanded search was conducted 2 April with a sonar scan and visual search from the centralized debris field of site 028 and moved towards site 019 (the primary debris fields). Several small items were identified and searched. All items observed were spread out and no bigger than about 6 inches. Nothing was recovered during this search as the winds increased beyond the safe operational limits of the drone and exceeded the ship's station keeping capability.
  - The expanded search continued on 3 April where it left off the previous day using the same methods as site 028. No HR was recovered, but one flight suit and one T-Shirt were recovered along with the debris IVO the recovered personal items.
  - We discontinued the search following the recovery of items when the winds and currents exceeded operational limits.





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# HMMH-463 Search/Recovery Effort AMB Non-Privileged Summary

04 Apr 2016



**Purpose:** The purpose of the AMB is to investigate the Mishap, determine causal factors(why it happened), and provide recommendations IOT prevent reoccurrence.

**TIME LINE:** Mishap at ~2235 on 14 Jan 2016

~2310 first USN assets arrive with HPD, HFD, Life Guard, and USCG (Search is primary effort until 21 Jan / Memorial, Transition to Salvage and Recovery)

-MDSU-1, USNS Salvor tasked to provide salvage recovery operations until relieved the first week of Feb by NAVSEA deep water capability. USNS Salvor remained the primary platform for operations. Deep water capability requested on 18 Jan via PHONCON and officially on 21 Jan, approved 02 Feb with NAVSEA and Deep Drone 8000 tasked.

-USNS Salvor conducted 7 sorties for 30 at days at sea, to include operations at the limits of their safety capability. They were unable to conduct active salvage on 3 of the sorties due to weather, damage to the ship and injuries sustained to her crew. They were down for maint for 14 days, 4 with good weather

-Debris and HR were collected throughout the Search / Salvage / Recovery effort from the surface, ocean floor and beaches on Oahu and Kauai

-27 Mar, Main Effort switched from salvage to recovery ops

-03 Apr, recovery operations suspended due to all known areas of debris being exhausted.

-On 3 April, recommended cessation of recovery operations believing the search area exhausted and all reasonable efforts to find and recover our Marines has been executed.

-The detailed search included Sites 028/019 and along the flight path to the minimum operational depth of the ROV ~200'. Search graphics are included in slide deck.

**Major Items Recovered (All Previous Dives):**

- C/P recovered both A/C / partial instrument panels
- HR and personal gear (flight suits, vests, helmets)
- Sections from both A/C left / right / Nose E-Bays
- Deck sections, Ramp (1)
- Partial Comm systems / GPWS x2
- Gear Boxes (missing 1 AGB and 1 NGB)
- Broom Closets (AFCS Servos)
- Pilot/Crew Chief Seats (missing 1 Crew Chief)
- Tail booms with Quick Disconnects
- 6 of 6 engines
- Main Rotor Blades (MRB) (~ 130' of 440') / Tail Rotor Blades
- 4 Life Rafts
- GPWS/IMDS provide flight data recording, closet items to a "Black Box" without voice recording
- The Naval Safety Center analysis of the wreckage supports a midair collision with an impact in excess of 100g.
- No identified any aircraft anomalies believed causal to the mishap have been Identified.

It is assumed, due to the environment and time that the complete recovery of HR and the salvage is not possible.

**Items Recovered on 01-03 April:**

- 1 item personal clothing (men's boxer shorts)
- 1 Flight Suit, 1 T-Shirt
- 1 Eng, 2 sec floor boards, 3 passenger seats, 1 Drive Shaft



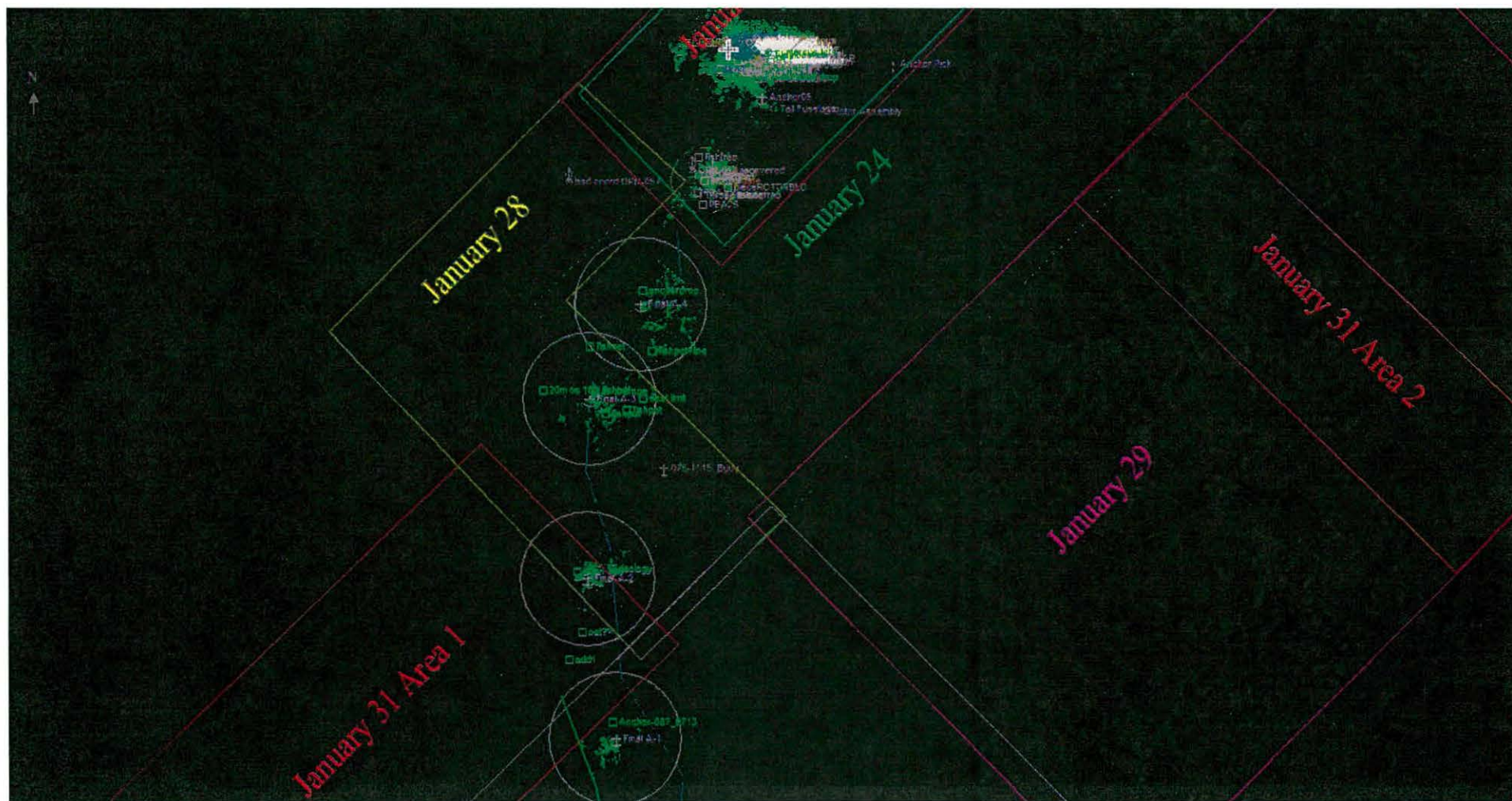


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# NAVSEA Overall Search



This slide depicts the searches along the flight path and the 3 primary recovery sites, from south to north with north at the top of the graphic. The Tail section and Sites 028 and 019 are north. The system is limited to 600 markers per graphic. All marks are either items (HR or debris) recovered or locations of a search of at least 7 seconds.







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Sites 028 and 019



(All Searches 1-3 April)

Key: Dark Green – All ROV stops and searches during USNS Slavor Sortie 1-3 April

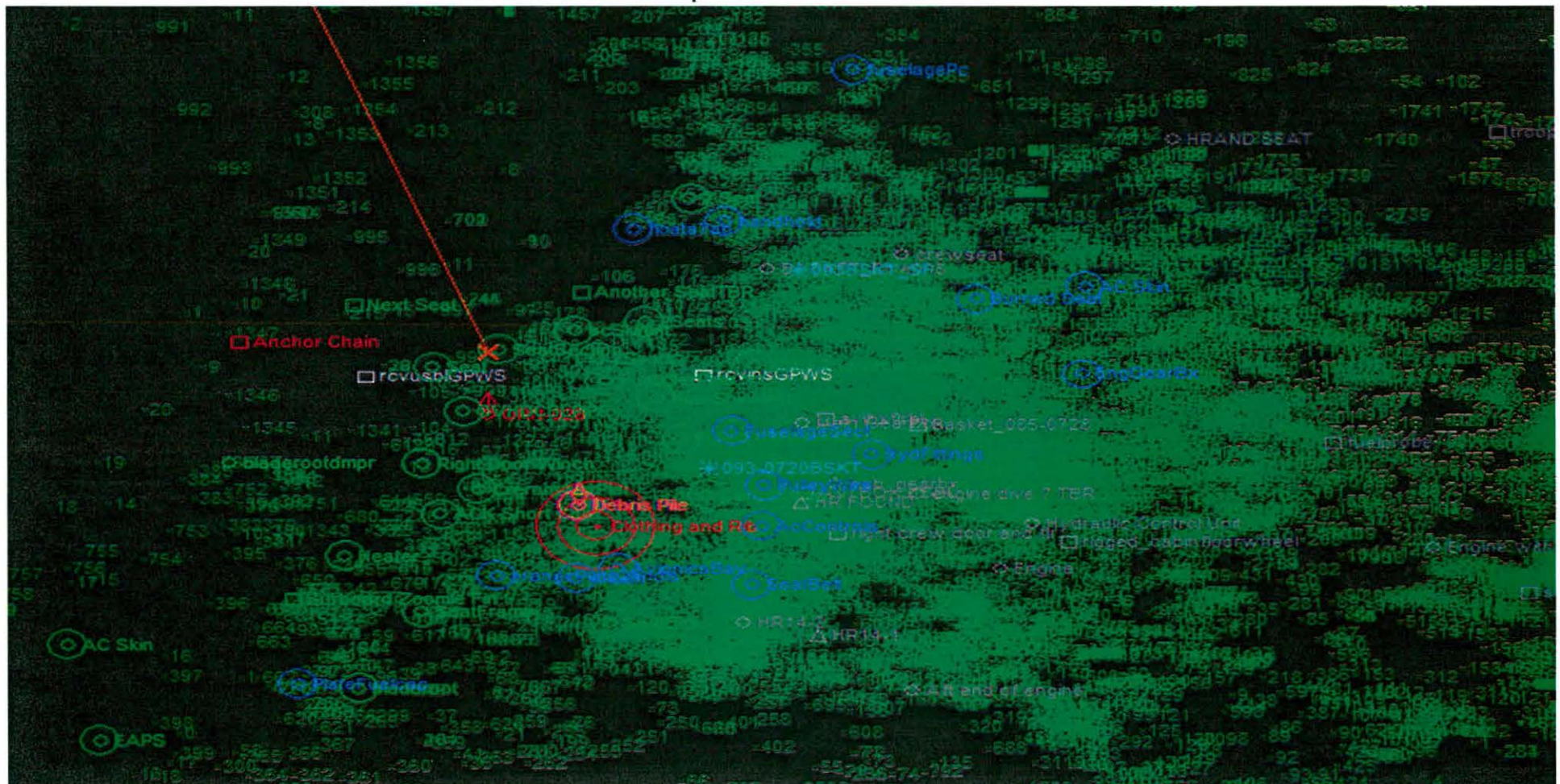
Blue – Items recovered on 02 April

Light Green – All previous recovered items

Yellow – Items search / recovered 03 April











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# NAVSEA Site 019 / A/C 06

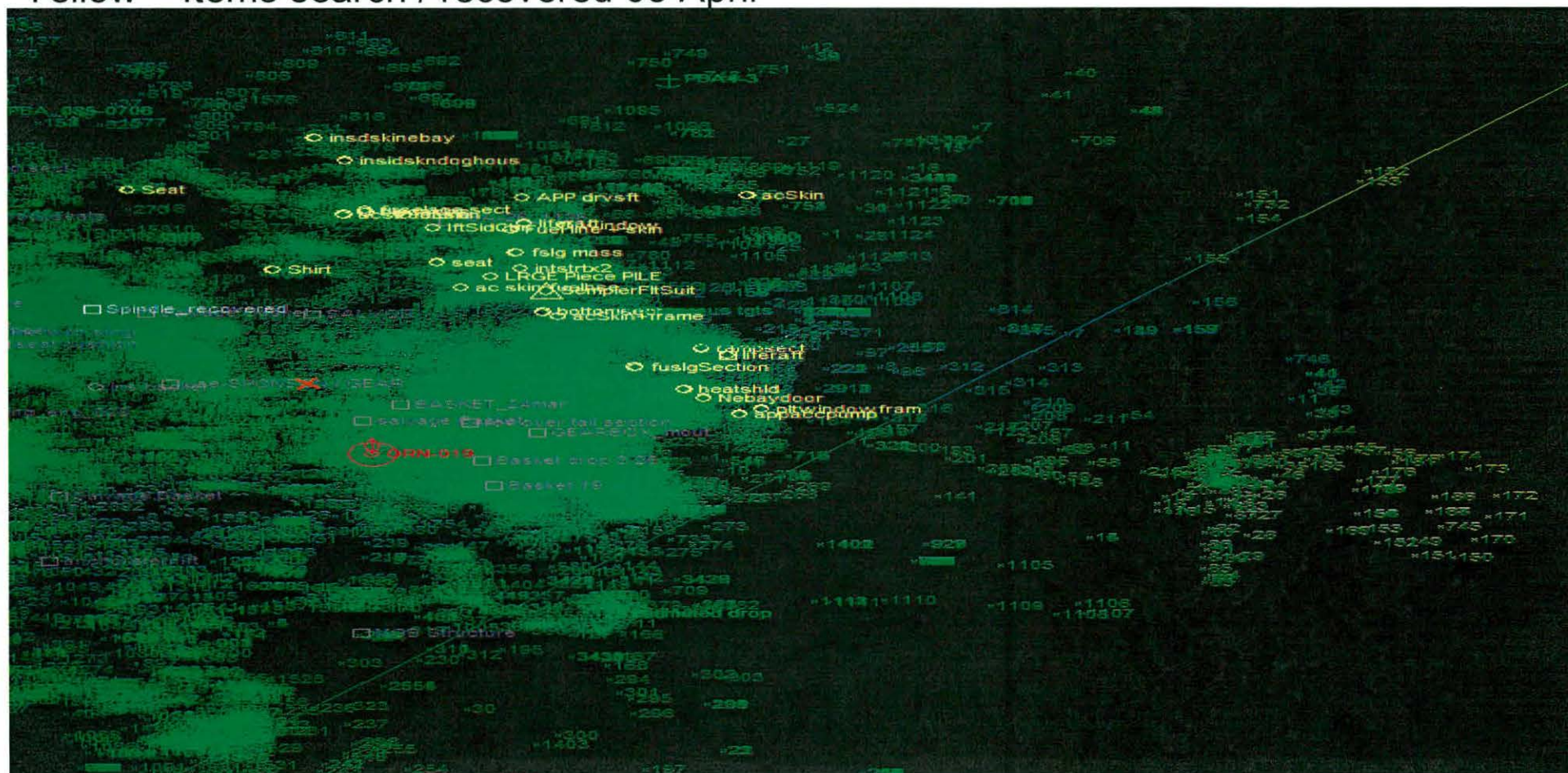


Key: Dark Green – All ROV stops and searches during USNS Salvor Sortie 1-3 April

Blue – Items recovered on 02 April

Light Green – All previous searched / recovered items

Yellow – Items search / recovered 03 April





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# AMB Hangar



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## A/C 06

- Cockpit Section
- Engines
- Bulkhead
- MGB and Blades
- Transition section and Gear
- Drive Shafts
- Tail Section



KANEOHE ACTIONS AT THE SQUADRON From LtCol Clepper, MCBH Base Operations Officer

90. 0530W: 44 Marines depart for Haliewa via CLB 3 bus transportation.

91. 0900W: USCG 14<sup>th</sup> Sector provides an LNO to the MCB Hawaii Emergency Operations Center. MAG-24 sent an LNO to 14<sup>th</sup> Sector. This process streamlined communications between both the USCG and USMC.

92. 0350W: (b)(6) from Federal Fire contacted the MCBH EOC to coordinate Federal Fire support with MCBH immediate support. (b)(6) was already in communication with Honolulu Fire Department. His contact number is (b)(6).

93. 0350W: Battalion Chief (b)(6) from Honolulu Fire Department is arrived with HFD with the initial HFD assets. Battalion Chief (b)(6), (b)(3) reached out to MCB Hawaii and requested USMC support to the event. At this point, no military representatives were on the ground at Haliewa. He stated on the phone that "debris from the mishap was washing up on the beach."

94. 0350W: MCB Hawaii Operations Officer contacted the MAG 24 Executive Officer to coordinate USMC communication with HFD and HPD assets on scene at Haliewa.

95. 0350W: MAG 24 and HMH-463 coordinated to move 44 Marines to the Haliewa area. However, CLB-3 was providing transportation assets. The only bus available was dropping Marines at Hickam for a Unit Deployment.

96. The MAG 24 XO passed that transportation would be necessary for the MAG 24 Marines and the Emergency Reclamation Team from HMH-463 at 0530W. The plan was to assemble and deploy these Marines from the HMH-463 barracks at 0530W.

0353W: The Facilities Director, MCB Hawaii, (b)(6) coordinated with the Anderson Dining Facility for the delivery of 50 box lunches at the Haliewa site.

99. At 0400, the HMH-463 Flight Surgeon and one other member of the squadron departed MCB Hawaii to facilitate liaison with Honolulu PD and FD on station.

0412W: The MAG 24 XO requested Combat Camera support from Marine Corps Base Hawaii for the Aviation Mishap Board.

100. At 0530 the first 44 man team was sent to search the mishap location in Haliewa.

101. At 0900, the USMC Mobile Command Post was sent to Haliewa.

102. 0951W (15 Jan): By this time, MAG 24 S-4 Officer, (b)(3) 10 USC § was the central location for all logistical support. For the first eight hours of the incident, the MCB Hawaii Emergency Operations Center and MAG 24 coordinated directly with external agencies.

103. By 1534W the Incident Management Team was in place with a liaison from MAG-24.

104. USCG liaisons were in place at the ICP in Haliewa and at the Marine Corps Base Hawaii Emergency Operations Center.

105. A USMC liaison was provided to Sector 14 by MAG-24.

106. 0817W (17 Jan): BG Sanborn arrives at MCB Hawaii. He and the MAG 24 CO displaced to Haliewa to review the SAR efforts.

ENCLOSURE (162)

# Marines fired commander days before deadly helicopter crash in Hawaii

By Gina Harkins and Andrew deGrandpre, Marine Corps Times 9:30 p.m. EST January 28, 2016



(Photo: Lance Cpl. Jacob D. Barber/Marine Corps)

The Marine Corps helicopter squadron reeling from the recent deaths of 12 colleagues saw its commanding officer removed from his job three days prior to the tragedy because senior officials determined he had failed to keep the unit operating at acceptable standards, Marine Corps Times has learned.

Lt. Col. Edward Pavelka was relieved of command Jan. 11, multiple sources confirmed. On Jan. 14, two CH-53E helicopters from Marine Heavy Helicopter Squadron 463 disappeared over the Pacific Ocean during a nighttime training mission about two miles north of Hawaii's Oahu island, where the aircraft were based.



MARINE CORPS TIMES

12 missing Marines identified after helicopters crash in Hawaii

(<http://www.marinecorpstimes.com/story/military/2016/01/17/12-missing-marines-identified-after-helicopters-crash-hawaii/78930050/>)

Pavelka, who led the squadron for less than 11 months, declined a request for comment.

A Marine official familiar with Pavelka's removal told Marine Corps Times that the commander was "not able to maintain material readiness standards ... for optimal use of manpower, material, facilities and funding."

"The Marine Corps has an exceptionally high standard for combat readiness and proficiency — especially in the aviation community," the official said, speaking on the condition of anonymity because he is not authorized to discuss specific personnel matters. "We hold commanders ultimately responsible for their units."



Lt. Col. Edward Pavelka, the former commanding officer of Marine Heavy Helicopter Squadron 463, was removed from his job Jan. 11 when superiors lost confidence in his ability to lead his Marines. (Photo: Marine Corps)

A Marine Corps spokeswoman, 1st Lt. Courtney Caimona, provided a statement to Marine Corps Times indicating that Brig. Gen. Russell Sanborn, the commanding general of 1st Marine Aircraft Wing, lost confidence in Pavelka's ability to lead the squadron, calling the move "in the best interest of the Marines and sailors of Marine Heavy Helicopter Squadron 463 and the Marine Corps."

"Pavelka did not commit misconduct," Caimona emphasized.

Sanborn announced the change in leadership during a unit-wide formation on Jan. 11, Caimona said. When Marine Corps Times inquired about Pavelka's firing, the general offered to discuss his decision and related questions about the squadron's recent performance. The interview was later canceled, however.



MARINE CORPS TIMES

Marine aviation deaths hit 5-year high

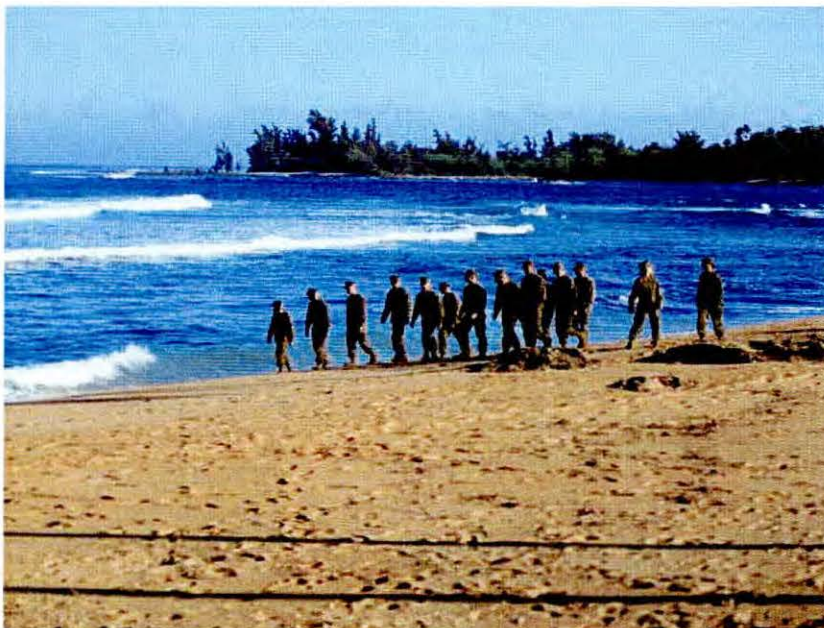
(<http://www.marinecorpstimes.com/story/military/2015/09/06/marine-aviation-deaths-hit-5-year-high/71665398/>)

ENCLOSURE (163)



Formal investigations into the accident are ongoing, Marine officials said. The search for survivors lasted five days. It was called off last week, Sept. 20, and all 12 Marines were declared dead although no remains were recovered.

It's not immediately clear what brought down the aircraft. Initial reports suggested they collided over the ocean and exploded. Coast Guard rescuers located four life rafts, but concluded that none had been occupied.



Troops walk along a beach in Hawaii on Jan. 18 during search efforts for 12 missing Marines. (Photo: Petty Officer 1st Class Levi Read/Coast Guard)

Six Marines were aboard each aircraft, Caimona said. On both, one instructor pilot was paired with a student pilot, and two instructor crew chiefs were paired with two students. Their training involved night vision equipment and a simulated scenario meant to practice loading troops and moving them.

It's unclear who was at the controls when the accident occurred.

"The instructors," Caimona said, "were fully qualified as crew chiefs and pilots in their respective roles."

However, a Marine familiar with the squadron's troubles leading up to Pavelka's removal said the squadron as a whole was "way, way low" on flight time. That source declined to speculate what may have depleted training opportunities, saying only "they were not flying enough."

Last September, after another deadly CH-53E crash in North Carolina, a Marine Corps Times investigation found that aviation-related deaths in the Marine Corps — there were at least 19 between January and October — had reached a five-year high. That analysis examined mishaps involving the service's fixed-wing jets, helicopters and MV-22B Ospreys.

Maintenance, flight hours and the effect on overall safety are concerns often cited by military leaders in the face of deep budget cuts imposed by Congress. Marine Corps Times requested the squadron's most recent readiness reports and inspection data, but officials declined to release that information saying "they may become relevant to ongoing investigations."

The CH-53 heavy-lift helicopter is always in great demand by operational commanders around the world. Pavelka's squadron recently deployed a detachment to Australia for six months, between April and October. The squadron's aircraft also have flown in support of several recent training exercises throughout the Asia-Pacific region.

Pavelka is awaiting a new assignment, Caimona said. He was replaced in Hawaii by Lt. Col. Eric Purcell.

Purcell addressed the squadron's Marines immediately after assuming command on Jan. 11. Sanborn has "the utmost faith and confidence" in Purcell's ability to lead them after the tragedy on Jan. 14, Caimona said.

Follow @GinaAHarkins (<https://twitter.com/GinaAHarkins>)

Follow @adegrandpre (<https://twitter.com/adegrandpre>)

*Andrew deGrandpre is a senior editor with the Military Times group. He oversees enterprise reporting and investigations. He can be reached at [adegrandpre@militarytimes.com](mailto:adegrandpre@militarytimes.com) (<mailto:adegrandpre@militarytimes.com>).*

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**To:** Casualty PCR USMC - Deceased; Casualty PCR USMC - INJ\_ILL\_WIA; (b)(6) (b) (3) 10 USC § 130b  
**Subject:** Timothy R; (b)(6) (b) (3) 10 USC § 130b; Irish Capt  
(FOUO) Casualty Report - STACH - (b)(6) (b) (3) 10 USC § 130b - Incident Date/Time: 2016/01/14 22:40  
**Attachments:** (b)(6) (b) (3) 10 USC § 130b STACH\_1-20-2016.rsrf  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

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\*\*\*\*\* CASUALTY REPORT \*\*\*\*\*  
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Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

(b)(6) (b) (3)

First Name:



Service: United States Marine Corps

Military Rank: b)(6), (b)(3)

Military Unit of Assignment: HMH-463

Date/Time of Incident (New/Old): 20160114/2240 / 20160114/2300

Circumstance: On 14 January 2016, a section of two CH-53Es, with six souls per aircraft, departed Marine Corps Base Kaneohe Bay at 2210 local time en route to the Tactical Flight Training Area (TFTA). At 2300 local time, the HMH-463 Operations Duty Officer received a phone call from Marine Corps Air Station Kaneohe Bay tower reporting a mid-air collision near the North Shore of Oahu. The scheduled return time for the Dash-1 aircraft was 2300 local time and the scheduled return time for the Dash-2 aircraft was 2345 local time.

Died in/out of Medical Facility Treatment: Died Outside A Medical Treatment Facility

Date/Time of Death: 20160114/2240

Place of Death City: Waimea

Place of Death State: HI

Place of Death Country: United States

Duty Status: Present For Duty

Remarks: At 0700 Hawaii Standard Time, 20 January 2016, after the conclusion of extensive search and rescue operations, and based upon all evidence at hand, including the circumstances of the incident and the presence of remains, the Commanding Officer, Marine Aircraft Group 24, (b)(6) (b) (3) 10 USC § 130b made a presumptive finding of death for the twelve U.S. Marines onboard the two aircraft with a time and date of death of 2240 Hawaii Standard Time, 14 January 2016. The USNS Salvor is in support of recovery and salvage operations and the Marine Corps aviation mishap investigation team. Marine Corps teams will continue to search the shoreline and recover debris. The Navy Mobile Dive Unit continues to locate significant wreckage on the sea floor. Additional remains have been located on the sea floor, but have not yet been recovered. DNA analysis is not yet complete on previously recovered remains. A command investigation was initiated on 14 January 2016 and is ongoing. Additional information will be provided as it becomes available.

Software Version: DCIPS Forward - Version 8.0 Build: 70 Release Date: 01 May 2014

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(b)(6) (b) (3)  
Irish Capt  
Timothy R; (b)(6) (b) (3) 10 USC § 130b 1MAW Casualty  
**Subject:** (FOUO) Casualty Report - STACH - (b)(6), (b)(3) Incident Date/Time: 2016/01/14 22:40  
**Attachments:** (b)(6), (b)(3) STACH\_1-20-2016.rsf  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

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\*\*\*\*\* CASUALTY REPORT \*\*\*\*\*  
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Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

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

First Name:

Service: United States Marine Corps

Military Rank: (b)(6), (b)(3)

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Died in/out of Medical Facility Treatment: Died Outside A Medical Treatment Facility

Date/Time of Death: 20160114/2240

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Place of Death State: HI

Place of Death Country: United States

Duty Status: Present For Duty

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(b)(6) (b) (3)  
Irish Capt  
Timothy R; (b)(6) (b) (3) 10 USC § 130b; 1MAW Casualty  
**Subject:** (FOUO) Casualty Report - STACH (b)(6) (b) (3) Incident Date/Time: 2016/01/14 22:40  
**Attachments:** (b)(6) (b) (3) STACH\_1-20-2016.rsf  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

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\*\*\*\*\* CASUALTY REPORT \*\*\*\*\*

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Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

(b)(6) (b) (3)

First Name:



Service: United States Marine Corps

Military Rank: (b)(6), (b)(3)

Military Unit of Assignment: HMH-463

Date/Time of Incident (New/Old): 20160114/2240 / 20160114/2300

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Duty Status: Present For Duty

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(b)(6) (b) (3)  
Irish Capt  
Timothy R; (b)(6) (b) (3) 10 USC § 130b 1MAW Casualty  
**Subject:** (FOUO) Casualty Report - STACH - (b)(6), (b)(3) - Incident Date/Time: 2016/01/14 22:40  
**Attachments:** (b)(6), (b)(3) STACH\_1-20-2016.rsf  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

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\*\*\*\*\* CASUALTY REPORT \*\*\*\*\*

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Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

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

First Name:



Service: United States Marine Corps

Military Rank: (b)(6), (b)(3)

Military Unit of Assignment: HMH-463

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**Subject:** Timothy R; (b)(6) (b) (3) 10 USC § 130b; IMAW Casualty (FOUO) Casualty Report - STACH (b)(6), (b)(3) Incident Date/Time: 2016/01/14 22:40  
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CASUALTY REPORT

\*\*\*\*\*

Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

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

First Name:



Service: United States Marine Corps

Military Rank: (b)(6), (b)(3)

Military Unit of Assignment: HMH-463

Date/Time of Incident (New/Old): 20160114/2240 / 20160114/2300

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Date/Time of Death: 20160114/2240

Place of Death City: Waimea

Place of Death State: HI

Place of Death Country: United States

Duty Status: Present For Duty

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**To:** Casualty PCR USMC - Deceased; Casualty PCR USMC - INJ\_ILL\_WIA; (b)(6) (b) (3) 10 USC § 130b  
**Subject:** Timothy R; (b)(6) (b) (3) 10 USC § 130b; 1MAW Casualty (FOUO) Casualty Report - STACH - (b)(6), (b)(3) - Incident Date/Time: 2016/01/14 22:40  
**Attachments:** (b)(6), (b)(3) STACH\_1-20-2016.rsaf  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

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\*\*\*\*\* CASUALTY REPORT \*\*\*\*\*  
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Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

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

First Name:



Middle Name: J

Service: United States Marine Corps

Military Rank: b)(6), (b)(7)(C)

Military Unit of Assignment: HMH-463

Date/Time of Incident (New/Old): 20160114/2240 / 20160114/2300

Circumstance: On 14 January 2016, a section of two CH-53Es, with six souls per aircraft, departed Marine Corps Base Kaneohe Bay at 2210 local time en route to the Tactical Flight Training Area (TFTA). At 2300 local time, the HMH-463 Operations Duty Officer received a phone call from Marine Corps Air Station Kaneohe Bay tower reporting a mid-air collision near the North Shore of Oahu. The scheduled return time for the Dash-1 aircraft was 2300 local time and the scheduled return time for the Dash-2 aircraft was 2345 local time.

Died in/out of Medical Facility Treatment: Died Outside A Medical Treatment Facility

Date/Time of Death: 20160114/2240

Place of Death City: Waimea

Place of Death State: HI

Place of Death Country: United States

Duty Status: Present For Duty

Remarks: At 0700 Hawaii Standard Time, 20 January 2016, after the conclusion of extensive search and rescue operations, and based upon all evidence at hand, including the circumstances of the incident and the presence of remains, the Commanding Officer, Marine Aircraft Group 24, (b)(6) (b) (3) 10 USC § 130b made a presumptive finding of death for the twelve U.S. Marines onboard the two aircraft with a time and date of death of 2240 Hawaii Standard Time, 14 January 2016. The USNS Salvor is in support of recovery and salvage operations and the Marine Corps aviation mishap investigation team. Marine Corps teams will continue to search the shoreline and recover debris. The Navy Mobile Dive Unit continues to locate significant wreckage on the sea floor. Additional remains have been located on the sea floor, but have not yet been recovered. DNA analysis is not yet complete on previously recovered remains. A command investigation was initiated on 14 January 2016 and is ongoing. Additional information will be provided as it becomes available.

Software Version: DCIPS Forward - Version 8.0 Build: 70 Release Date: 01 May 2014

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**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Wednesday, January 20, 2016 9:53  
**To:** Casualty PCR USMC - Deceased; Casualty PCR USMC - INJ\_ILL\_WIA; (b)(6) (b) (3) 10 USC § 130b  
  
(b)(6), (b)(3) Irish Capt  
**Subject:** Timothy R; (b)(6) (b) (3) 10 USC § 130b 1MAW Casualty  
(FOUO) Casualty Report - STACH - (b)(6), (b)(3) Incident Date/Time: 2016/01/14  
22:40  
**Attachments:** (b)(6), (b)(3) STACH\_1-20-2016.rsrf  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

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\*\*\*\*\* CASUALTY REPORT \*\*\*\*\*

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Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

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

First Name:

Service: United States Marine Corps

Military Rank: b)(6), (b)(7)(C)

Military Unit of Assignment: HMH-463

Date/Time of Incident (New/Old): 20160114/2240 / 20160114/2300

Circumstance: On 14 January 2016, a section of two CH-53Es, with six souls per aircraft, departed Marine Corps Base Kaneohe Bay at 2210 local time en route to the Tactical Flight Training Area (TFTA). At 2300 local time, the HMH-463 Operations Duty Officer received a phone call from Marine Corps Air Station Kaneohe Bay tower reporting a mid-air collision near the North Shore of Oahu. The scheduled return time for the Dash-1 aircraft was 2300 local time and the scheduled return time for the Dash-2 aircraft was 2345 local time.

Died in/out of Medical Facility Treatment: Died Outside A Medical Treatment Facility

Date/Time of Death: 20160114/2240

Place of Death City: Waimea

Place of Death State: HI

Place of Death Country: United States

Duty Status: Present For Duty

Remarks: At 0700 Hawaii Standard Time, 20 January 2016, after the conclusion of extensive search and rescue operations, and based upon all evidence at hand, including the circumstances of the incident and the presence of remains, the Commanding Officer, Marine Aircraft Group 24, (b)(6) (b) (3) 10 USC § 130b made a presumptive finding of death for the twelve U.S. Marines onboard the two aircraft with a time and date of death of 2240 Hawaii Standard Time, 14 January 2016. The USNS Salvor is in support of recovery and salvage operations and the Marine Corps aviation mishap investigation team. Marine Corps teams will continue to search the shoreline and recover debris. The Navy Mobile Dive Unit continues to locate significant wreckage on the sea floor. Additional remains have been located on the sea floor, but have not yet been recovered. DNA analysis is not yet complete on previously recovered remains. A command investigation was initiated on 14 January 2016 and is ongoing. Additional information will be provided as it becomes available.

Software Version: DCIPS Forward - Version 8.0 Build: 70 Release Date: 01 May 2014

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AIK95XVQXJHYNTSC

**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Wednesday, January 20, 2016 10:05  
**To:** Casualty PCR USMC - Deceased; Casualty PCR USMC - INJ\_ILL\_WIA; (b)(6) (b) (3) 10 USC § 130b  
**Subject:** Timothy R; (b)(6) (b) (3) 10 USC § 130b; 1MAW Casualty (FOUO) Casualty Report - STACH - (b)(6), (b)(3) - Incident Date/Time: 2016/01/14 22:40  
**Attachments:** (b)(6), (b)(3) STACH\_1-20-2016.rsrf  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

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\*\*\*\*\* CASUALTY REPORT \*\*\*\*\*  
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Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

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

First Name:



Service: United States Marine Corps

Military Rank: (b)(6), (b)(3)

Military Unit of Assignment: HMH-463

Date/Time of Incident (New/Old): 20160114/2240 / 20160114/2300

Circumstance: On 14 January 2016, a section of two CH-53Es, with six souls per aircraft, departed Marine Corps Base Kaneohe Bay at 2210 local time en route to the Tactical Flight Training Area (TFTA). At 2300 local time, the HMH-463 Operations Duty Officer received a phone call from Marine Corps Air Station Kaneohe Bay tower reporting a mid-air collision near the North Shore of Oahu. The scheduled return time for the Dash-1 aircraft was 2300 local time and the scheduled return time for the Dash-2 aircraft was 2345 local time.

Died in/out of Medical Facility Treatment: Died Outside A Medical Treatment Facility

Date/Time of Death: 20160114/2240

Place of Death City: Waimea

Place of Death State: HI

Place of Death Country: United States

Duty Status: Present For Duty

Remarks: At 0700 Hawaii Standard Time, 20 January 2016, after the conclusion of extensive search and rescue operations, and based upon all evidence at hand, including the circumstances of the incident and the presence of remains, the Commanding Officer, Marine Aircraft Group 24, (b)(6) (b) (3) 10 USC § 130b made a presumptive finding of death for the twelve U.S. Marines onboard the two aircraft with a time and date of death of 2240 Hawaii Standard Time, 14 January 2016. The USNS Salvor is in support of recovery and salvage operations and the Marine Corps aviation mishap investigation team. Marine Corps teams will continue to search the shoreline and recover debris. The Navy Mobile Dive Unit continues to locate significant wreckage on the sea floor. Additional remains have been located on the sea floor, but have not yet been recovered. DNA analysis is not yet complete on previously recovered remains. A command investigation was initiated on 14 January 2016 and is ongoing. Additional information will be provided as it becomes available.

Software Version: DCIPS Forward - Version 8.0 Build: 70 Release Date: 01 May 2014

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AIK95XVQXJHYNTSC

**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Wednesday, January 20, 2016 10:30  
**To:** Casualty PCR USMC - Deceased; Casualty PCR USMC - INJ\_ILL\_WIA; (b)(6) (b) (3) 10 USC § 130b  
(b)(6) (b) (3) 10 USC § 130b  
(b)(6) (b) (3) 10 USC § 130b, (b)(6), (b)(3) Irish Capt  
**Subject:** Timothy R; (b)(6) (b) (3) 10 USC § 130b 1MAW Casualty  
(FOUO) Casualty Report - STACH - (b)(6), (b)(3) Incident Date/Time: 2016/01/14 22:40  
**Attachments:** (b)(6), (b)(3) STACH\_1-20-2016.rsf  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

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\*\*\*\*\* CASUALTY REPORT \*\*\*\*\*

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Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

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

First Name



Service: United States Marine Corps

Military Rank: (b)(6), (b)(3)

Military Unit of Assignment: HMMH-463

Date/Time of Incident (New/Old): 20160114/2240 / 20160114/2300

Circumstance: On 14 January 2016, a section of two CH-53Es, with six souls per aircraft, departed Marine Corps Base Kaneohe Bay at 2210 local time en route to the Tactical Flight Training Area (TFTA). At 2300 local time, the HMMH-463 Operations Duty Officer received a phone call from Marine Corps Air Station Kaneohe Bay tower reporting a mid-air collision near the North Shore of Oahu. The scheduled return time for the Dash-1 aircraft was 2300 local time and the scheduled return time for the Dash-2 aircraft was 2345 local time.

Died in/out of Medical Facility Treatment: Died Outside A Medical Treatment Facility

Date/Time of Death: 20160114/2240

Place of Death City: Waimea

Place of Death State: HI

Place of Death Country: United States

Duty Status: Present For Duty

Remarks: At 0700 Hawaii Standard Time, 20 January 2016, after the conclusion of extensive search and rescue operations, and based upon all evidence at hand, including the circumstances of the incident and the presence of remains, the Commanding Officer, Marine Aircraft Group 24, (b)(6) (b) (3) 10 USC § 130b made a presumptive finding of death for the twelve U.S. Marines onboard the two aircraft with a time and date of death of 2240 Hawaii Standard Time, 14 January 2016. The USNS Salvor is in support of recovery and salvage operations and the Marine Corps aviation mishap investigation team. Marine Corps teams will continue to search the shoreline and recover debris. The Navy Mobile Dive Unit continues to locate significant wreckage on the sea floor. Additional remains have been located on the sea floor, but have not yet been recovered. DNA analysis is not yet complete on previously recovered remains. A command investigation was initiated on 14 January 2016 and is ongoing. Additional information will be provided as it becomes available.

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AIK95XVQXJHYNTSC

AIKXVQGJLNSC

**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Wednesday, January 20, 2016 10:22  
**To:** Casualty PCR USMC - Deceased; Casualty PCR USMC - INJ\_ILL\_WIA; (b)(6) (b) (3) 10 USC § 130b  
**Subject:** Timothy R; (b)(6) (b) (3) 10 USC § 130b; 1MAW Casualty (FOUO) Casualty Report - STACH - (b)(6), (b)(3) - Incident Date/Time: 2016/01/14 22:40  
**Attachments:** (b)(6), (b)(3) STACH\_1-20-2016.rsaf  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

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\*\*\*\*\* CASUALTY REPORT \*\*\*\*\*  
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Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

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

First Name:



Service: United States Marine Corps

Military Rank: (b)(6), (b)(3)

Military Unit of Assignment: HMH-463

Date/Time of Incident (New/Old): 20160114/2240 / 20160114/2300

Circumstance: On 14 January 2016, a section of two CH-53Es, with six souls per aircraft, departed Marine Corps Base Kaneohe Bay at 2210 local time en route to the Tactical Flight Training Area (TFTA). At 2300 local time, the HMH-463 Operations Duty Officer received a phone call from Marine Corps Air Station Kaneohe Bay tower reporting a mid-air collision near the North Shore of Oahu. The scheduled return time for the Dash-1 aircraft was 2300 local time and the scheduled return time for the Dash-2 aircraft was 2345 local time.

Died in/out of Medical Facility Treatment: Died Outside A Medical Treatment Facility

Date/Time of Death: 20160114/2240

Place of Death City: Waimea

Place of Death State: HI

Place of Death Country: United States

Duty Status: Present For Duty

Remarks: At 0700 Hawaii Standard Time, 20 January 2016, after the conclusion of extensive search and rescue operations, and based upon all evidence at hand, including the circumstances of the incident and the presence of remains, the Commanding Officer, Marine Aircraft Group 24, (b)(6) (b) (3) 10 USC § 130b made a presumptive finding of death for the twelve U.S. Marines onboard the two aircraft with a time and date of death of 2240 Hawaii Standard Time, 14 January 2016. The USNS Salvor is in support of recovery and salvage operations and the Marine Corps aviation mishap investigation team. Marine Corps teams will continue to search the shoreline and recover debris. The Navy Mobile Dive Unit continues to locate significant wreckage on the sea floor. Additional remains have been located on the sea floor, but have not yet been recovered. DNA analysis is not yet complete on previously recovered remains. A command investigation was initiated on 14 January 2016 and is ongoing. Additional information will be provided as it becomes available.

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AIK95XVQXJHYNTSC

**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Wednesday, January 20, 2016 10:32  
**To:** Casualty PCR USMC - Deceased; Casualty PCR USMC - INJ\_ILL\_WIA; (b)(6) (b) (3) 10 USC § 130b  
**Subject:** Timothy R; (b)(6) (b) (3) 10 USC § 130b 1MAW Casualty (FOUO) Casualty Report - STACH - (b)(6) (b) (3) - Incident Date/Time: 2016/01/14 22:40  
**Attachments:** (b)(6) (b) (3) STACH\_1-20-2016.rsف  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

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\*\*\*\*\* CASUALTY REPORT \*\*\*\*\*

Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

(b)(6) (b) (3)

First Name:

Service: United States Marine Corps

Military Rank: (b)(6), (b)(3)

Military Unit of Assignment: HMH-463

Date/Time of Incident (New/Old): 20160114/2240 / 20160114/2300

Circumstance: On 14 January 2016, a section of two CH-53Es, with six souls per aircraft, departed Marine Corps Base Kaneohe Bay at 2210 local time en route to the Tactical Flight Training Area (TFTA). At 2300 local time, the HMH-463 Operations Duty Officer received a phone call from Marine Corps Air Station Kaneohe Bay tower reporting a mid-air collision near the North Shore of Oahu. The scheduled return time for the Dash-1 aircraft was 2300 local time and the scheduled return time for the Dash-2 aircraft was 2345 local time.

Died in/out of Medical Facility Treatment: Died Outside A Medical Treatment Facility

Date/Time of Death: 20160114/2240

Place of Death City: Waimea

Place of Death State: HI

Place of Death Country: United States

Duty Status: Present For Duty

Remarks: At 0700 Hawaii Standard Time, 20 January 2016, after the conclusion of extensive search and rescue operations, and based upon all evidence at hand, including the circumstances of the incident and the presence of remains, the Commanding Officer, Marine Aircraft Group 24, (b)(6) (b) (3) 10 USC § 130b made a presumptive finding of death for the twelve U.S. Marines onboard the two aircraft with a time and date of death of 2240 Hawaii Standard Time, 14 January 2016. The USNS Salvor is in support of recovery and salvage operations and the Marine Corps aviation mishap investigation team. Marine Corps teams will continue to search the shoreline and recover debris. The Navy Mobile Dive Unit continues to locate significant wreckage on the sea floor. Additional remains have been located on the sea floor, but have not yet been recovered. DNA analysis is not yet complete on previously recovered remains. A command investigation was initiated on 14 January 2016 and is ongoing. Additional information will be provided as it becomes available.

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AIK95XVQXJHYNTSC



**From:** (b)(6) (b) (3) 10 USC § 130b  
**Sent:** Wednesday, January 20, 2016 10:40  
**To:** Casualty PCR USMC - Deceased; Casualty PCR USMC - INJ\_ILL\_WIA; (b)(6) (b) (3) 10 USC § 130b  
  
(b)(6) (b) (3)  
Irish Capt  
Timothy R; (b)(6) (b) (3) 10 USC § 130b; 1MAW Casualty  
**Subject:** (FOUO) Casualty Report - STACH (b)(6), (b)(3) - Incident Date/Time:  
2016/01/14 22:40  
**Attachments:** (b)(6), (b)(3) STACH\_1-20-2016.rsf  
**Signed By:** (b)(6) (b) (3) 10 USC § 130b

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\*\*\*\*\* CASUALTY REPORT \*\*\*\*\*  
\*\*\*\*\*

Report Type: STACH

Casualty Type: Nonhostile

Casualty Status: DECEASED

Casualty Category: Accident

Report Number: 201601G

Personnel Type: Regular

Personnel Affiliation: Active Duty

Personnel Category: Obligated/Voluntary Service

Last Name:

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

First Name:

Service: United States Marine Corps

Military Unit of Assignment: HMH-463

Date/Time of Incident (New/Old): 20160114/2240 / 20160114/2300

Circumstance: On 14 January 2016, a section of two CH-53Es, with six souls per aircraft, departed Marine Corps Base Kaneohe Bay at 2210 local time en route to the Tactical Flight Training Area (TFTA). At 2300 local time, the HMH-463 Operations Duty Officer received a phone call from Marine Corps Air Station Kaneohe Bay tower reporting a mid-air collision near the North Shore of Oahu. The scheduled return time for the Dash-1 aircraft was 2300 local time and the scheduled return time for the Dash-2 aircraft was 2345 local time.

Died in/out of Medical Facility Treatment: Died Outside A Medical Treatment Facility

Date/Time of Death: 20160114/2240

Place of Death City: Waimea

Place of Death State: HI

Place of Death Country: United States

Duty Status: Present For Duty

Remarks: At 0700 Hawaii Standard Time, 20 January 2016, after the conclusion of extensive search and rescue operations, and based upon all evidence at hand, including the circumstances of the incident and the presence of remains, the Commanding Officer, Marine Aircraft Group 24, (b)(6) (b) (3) 10 USC § 130b made a presumptive finding of death for the twelve U.S. Marines onboard the two aircraft with a time and date of death of 2240 Hawaii Standard Time, 14 January 2016. The USNS Salvor is in support of recovery and salvage operations and the Marine Corps aviation mishap investigation team. Marine Corps teams will continue to search the shoreline and recover debris. The Navy Mobile Dive Unit continues to locate significant wreckage on the sea floor. Additional remains have been located on the sea floor, but have not yet been recovered. DNA analysis is not yet complete on previously recovered remains. A command investigation was initiated on 14 January 2016 and is ongoing. Additional information will be provided as it becomes available.

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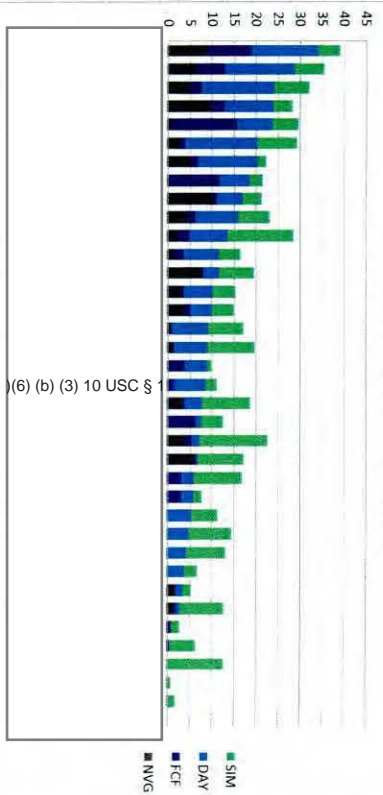
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AIKXVQGJLNSC

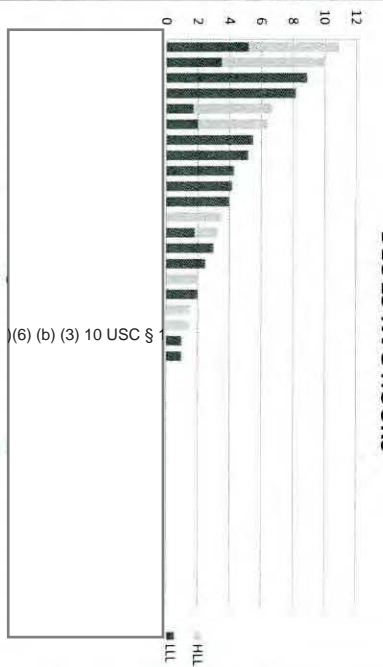
CH-53E SUMMARY JUNE - DECEMBER

Printed on: 4/8/2016

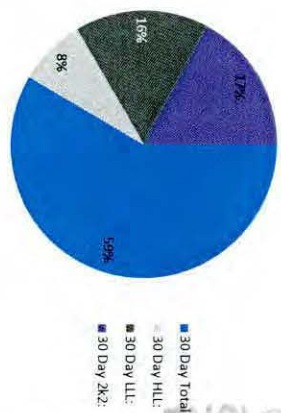
DEC 15 PILOT HOURS SUMMARY



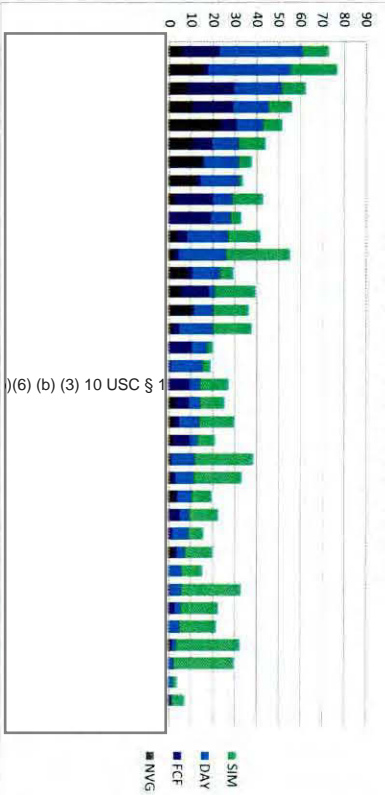
DEC 15 NVG HOURS



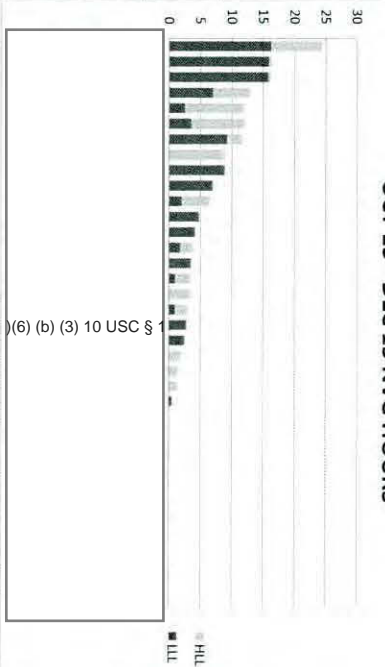
DEC 15 SUMMARY



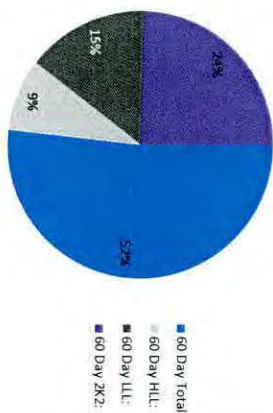
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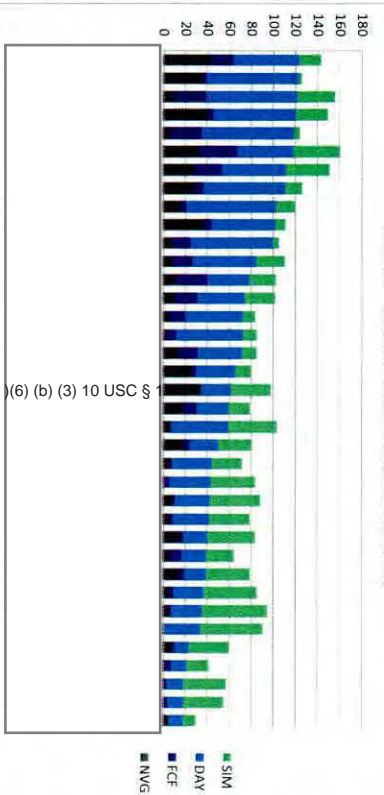
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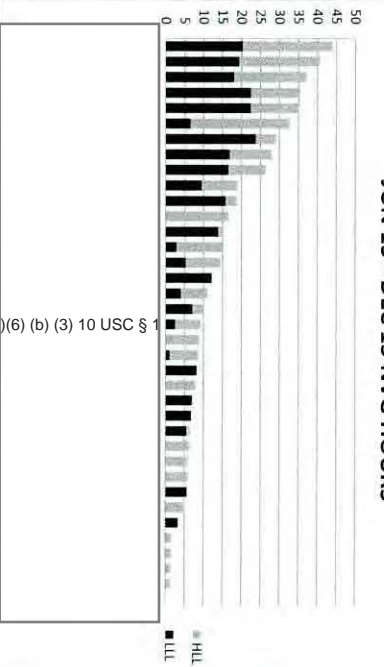
OCT 15 - DEC 15 SUMMARY



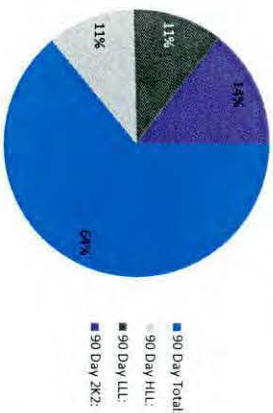
JUN 15 - DEC 15 PILOT HOURS SUMMARY



JUN 15 - DEC 15 NVG HOURS



JUN 15 - DEC 15 SUMMARY

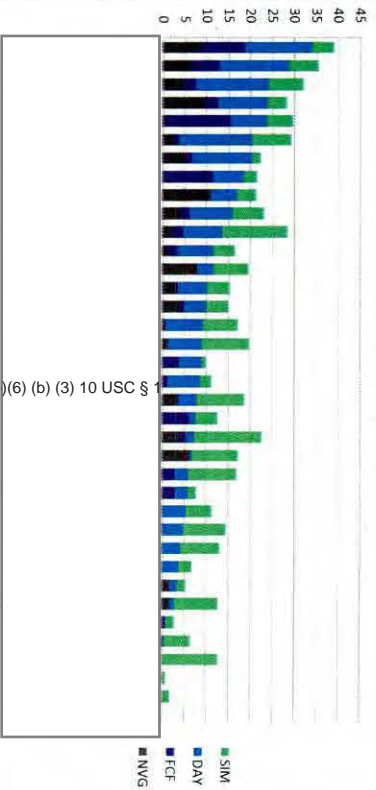




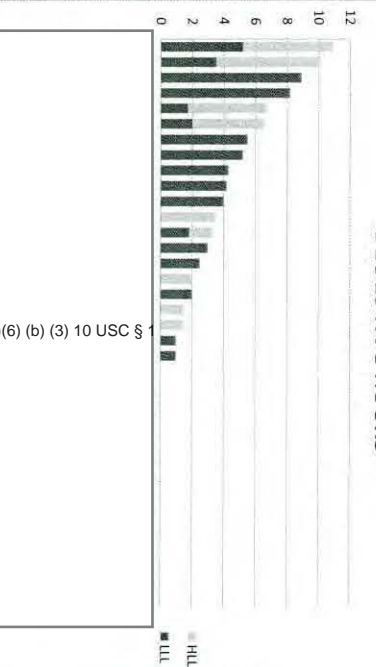
# CH-53E SUMMARY JUNE - DECEMBER

Printed on: 4/8/2016

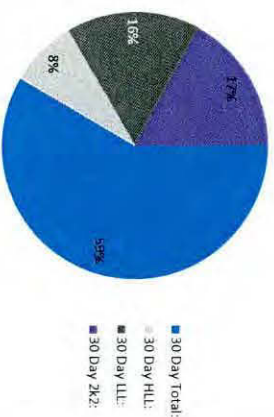
## DEC 15 PILOT HOURS SUMMARY



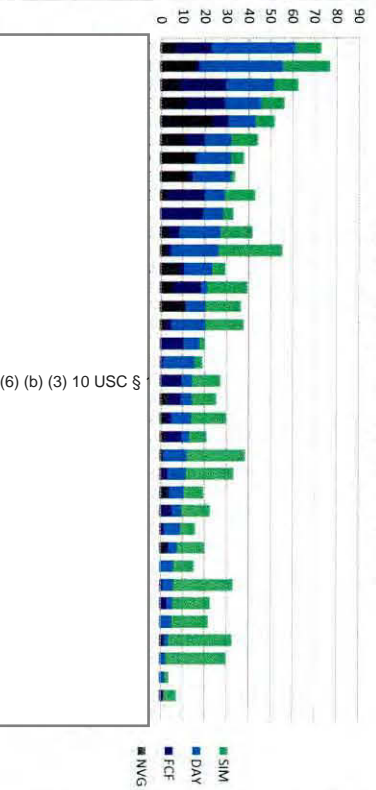
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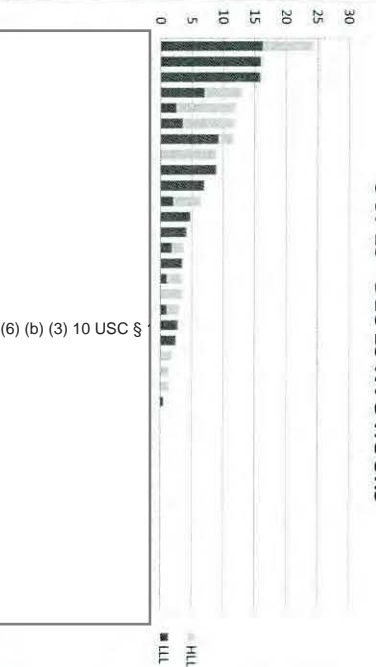
## DEC 15 SUMMARY



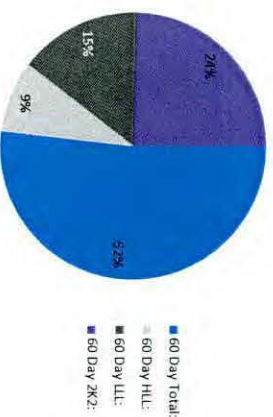
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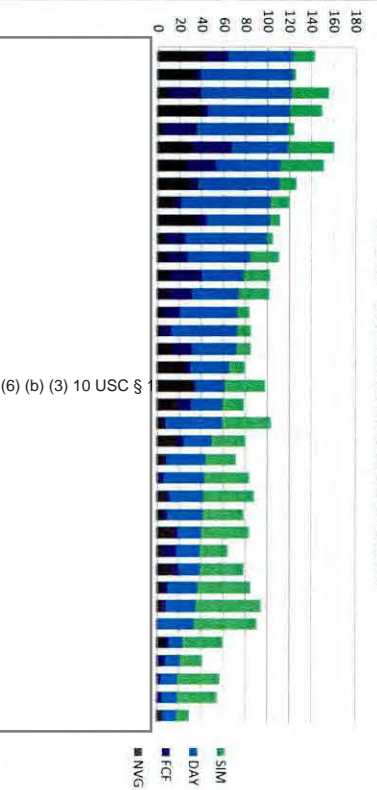
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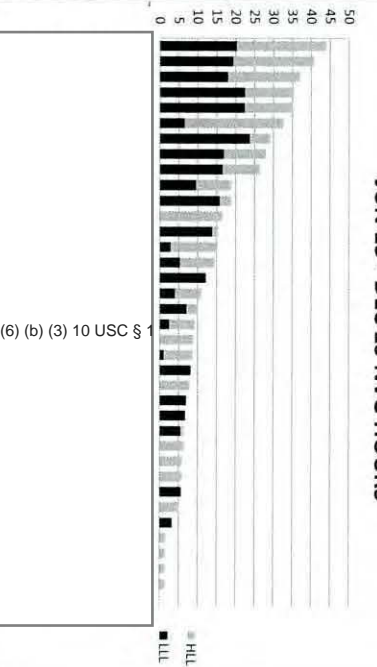
## OCT 15 - DEC 15 SUMMARY



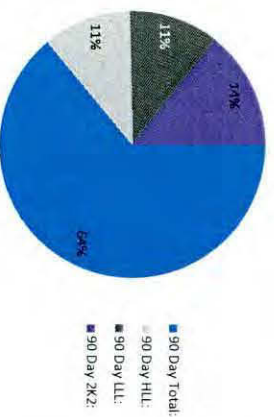
## JUN 15 - DEC 15 PILOT HOURS SUMMARY



## JUN 15 - DEC 15 NVG HOURS



## JUN 15 - DEC 15 SUMMARY





UNITED STATES MARINE CORPS  
MARINE AIRCRAFT GROUP 24  
1ST MARINE AIRCRAFT WING  
BOX 63047  
MCBH KANEOHE BAY HAWAII 96863-3047

IN REPLY REFER TO:  
1000  
OPS  
12 Apr 16

From: (b)(6) (b) (3) 10 USC § 130b  
To: Senior Member Marine Heavy Helicopter Squadron 463 JAG Investigation

Subj: AVAILABILITY OF RANGES AND TRAINING AREAS ON OAHU

1. I have been stationed at Marine Corps Base Hawaii, Kaneohe Bay and in a flying status off and on since 2000 for a total of nine years of flight status. During this time, the availability of training areas, landing zones (LZ), and TERF routes have become more restrictive due to a combination of reasons. Initially there were about 15 LZs (including six on Army controlled land) and four TERF routes of varying difficulty located within the Alert area next to Wheeler Army Airfield. Currently there are four Army and three contracted LZs capable of supporting CH53 E's with only one TERF route left.

2. The most important fact is the Marine Corps does not own any training areas or ranges required for higher level training and readiness (T&R) codes in the State of Hawaii. This has led to Marine Aviation (primarily MAG-24, but also transient units) being reliant on the Army and Navy for access to ranges and training areas. This has been further compounded by the fact that the main training area for Assault Aircraft is leased by the Army and the owners have opted to allow the installation of Wind Turbines for electrical generation. They also limit the training LZ's and TERF routes available on a regular basis. The leased lands are also the primary location for advanced external operations, a core MET for the CH53 E's.

3. The list of LZs available for training on Oahu has been decreasing at a steady rate since the early 2000's. With the Marine Corps not having ownership of the training areas, we have been forced to rely on the Army to ensure the long range health of the training areas. This option failed to take into account the "Pivot to the Pacific" and the growing footprint of both MAG-24 and the 25<sup>th</sup> CAB. The already congested airspace will become even more congested over the next several years with these additions. There are already approved plans for additional Wind Turbines along the routes that were previously used as course rules for MAG-24 in and out of the training area.

4. As aircraft readiness and the corresponding pilot/crew proficiency have decreased we essentially made training and operating in Hawaii more challenging. This combination is likely to increase the likelihood of squadrons being forced to "chase the X", and lead to an overall decrease in the MAG being prepared to "Fight Tonight", while simultaneously putting our Marines at greater risk for Mishap. I see this as the largest single risk to aviation in Hawaii.

(b)(6) (b) (3) 10 USC § 130b



## USMC Waimea Bay Aircraft Incident 2016

### ICS 209 Incident Status Summary 02

This format is approved by PACAREA for situational reporting vice the SITREP template.

<b>1. Incident Name</b> USMC Waimea Bay Aircraft Incident 2016	<b>2. Operational Period (Date / Time)</b> From: 16Jan16 0800    To: 16Jan16 2000 Time of Report: 0800W	<b>INCIDENT STATUS</b> <b>SUMMARY ICS 209</b> <b>T/H -CG</b>
<b>3. Type of Incident: SAR</b>		
<b>4. Situation Summary:</b> Sector Honolulu received two reports of flare sightings in the vicinity Waimea Bay, Oahu. Reports were correlated to two overdue USMC CH-53 aircraft with 12 Marines onboard who were conducting training in the area. JRCC initiated a CIC (Critical Information Call) call, and launched ASBP MH-65 and HC-130 to investigate; HSM-37 (Easy Rider-41), Honolulu FD Air-1, 2 Honolulu FD Surface Asset, Honolulu PD police-1, CGC KISKA, CGC AHI, and two USN Warships have responded. Initial on scene reports indicate a large debris field centered around a life raft with no POB, metal fragments, fire on the water, and a strong fuel scent. Both helicopters are from Heavy Helicopter Squadron 463.		
<b>Current Operations:</b> 2000W 15 Jan 2016 - Unified Command (CG/USMC) provided initial brief to local families on search efforts, status and dedicated resources at the Kaneohe Marine Corps Base Hawaii Chapel. USCG liaisons remain in place at the ICP in Haleiwa and at the Marine Corps Base Hawaii EOC. Surface assets on scene include CGC KISKA, CGC AHI, USS GRIDLEY, USS JOHN PAUL JONES. USS GRIDLEY responsible for airspace management and acting as OSC (On-Scene Commander) with embarked CG LT from Sector Honolulu. Air assets including ASBP C130, ASBP H65, and USN HSM 37 in place and searching. 2030W USN HSM 37 secured for evening. 2100W ICP at Haleiwa, HI with Honolulu Fire Department, Ocean Safety and Honolulu Police Department secured until 16 Jan 0630W from shoreline searches. 2230W Report from USCG liaison at Haleiwa that debris was found on Makua Beach at 1130W 15JAN16 to include, large black plastic sheeting, which was confirmed as aircraft debris. Now in custody at Haleiwa Unified Command Post.		
<b>5. Weather Forecast:</b>  <b>NOAA WX Service:</b>  <b>16Jan16 0800-2000:</b> SE wind 7 to 10 kt becoming N in the morning. Isolated showers before noon. NW swell 12 to 13 ft at 15 seconds. Waves 11 to 13 ft.		

#### **6. Command Objectives:**

1. Provide for safety and security of responders and maximize the protection of public health and welfare
2. Conduct an operational risk assessment
3. Implement Federal Aviation Administration (FAA) air space closure and monitor for compliance
4. Establish a Family Assistance program and provide joint family briefings
5. Search for and rescue persons in distress
6. Provide life-saving assistance to all persons in distress
7. Conduct joint SAR efforts and complete survivor accountability
8. Evacuate survivors to a place of safety for further medical treatment and triage and transport to hospital
9. Implement scene integrity and evidence collection, storage, and disposal
10. Develop and implement the salvage plan
11. Manage a coordinated interagency response effort that reflects the composition of a Unified Command
12. Inform the public, stakeholders, and the media of response activities
13. Establish internal resource request and external resource ordering procedures
14. Identify aircraft location and develop assessment plan
15. Provide and ensure responders have access to Critical Incident Stress Management (CISM) programs and support

#### **Operational Period:**

- 15 January 2016/ 2000 to 16 January 2016/ 0800

#### **Unified Command:**

- U.S. Coast Guard D14
- U.S. Marine Corps Air Group 24

#### **Priorities:**

- Safety of Responders & Public
- Incident stabilization & Unified Command establishment
- Security
- Information Management

#### **Limitations/Constraints:**

- Potential for adverse weather (strong winds, wave height)
- Critical Information handling
- Crew rest requirements
- Interagency communications/connectivity
- Evidence preservation requirements

**Command Emphasis:** For this operational period, our continued emphasis will be to conduct safe response operations, especially in aircraft air space de-confliction. IC shall be immediately notified of any mishaps, injuries to responders, discoveries or sightings (debris or other), or major asset coverage gaps.

**7. Future Plan:** Execute air tasking order and associated search action plan for 16 Jan 2016. Adapt search action plans on basis of debris found. Provide ICS-209 twice daily. Family brief to be conducted by USCG/USMC unified command at 1900W daily. Continue search in coordination with USMC. Naval assets confirmed availability through 2000 17 Jan 201. USMC continues lead shore side branch, salvage, and investigation groups with HPD and HFD support.



<b>8. Personnel Accountability:</b>			
	<b>Total</b>	<b>Unaccounted</b>	<b>% Accounted For</b>
USMC CH-53 #1	6	6	0%
USMC CH-53 #2	6	6	0%
<b>Total</b>	<b>12</b>	<b>12</b>	<b>0%</b>
<b>9. Personnel Casualties:</b> (i.e. reference msg traffic. No names or ID#'s) NSTR			
<b>10. Type of Event:</b>			
<input type="checkbox"/> Oil/HAZMAT	<input type="checkbox"/> Civil Disturbance	<input checked="" type="checkbox"/> SAR/LE	
<input type="checkbox"/> Marine Disaster	<input type="checkbox"/> Military Out load	<input type="checkbox"/> Other: Heavy Weather	
<b>11. Critical Resource Status:</b>			
CG WPB '87	CGC AHI U/W		
CG WPB '110	CGC KISKA U/W		
USN DDG	USS JOHN PAUL JONES U/W		
USN DDG	USS GRIDLEY U/W		
CG HH-65	CG Rescue 6547 Operational		
CG C-130	CG Rescue 1719, 1707 Operational		
<b>D14 Command Post</b>	USCG - 54		
	USMC - 1		
	HFD - 0		
	HPD - 0		
	Total - 55		
<b>12. Sorties/Patrols Summary: (list of sorties since last report)</b>			
<b>Air:</b>			
Number of Sorties/Patrols	20		
Area Covered (square nautical miles)	4,471 SQ. NM		
<b>Surface:</b>			
Number of Sorties/Patrols	12		
Area Covered (square nautical miles)	572 SQ. NM		
Joint SAR Plan POS	42%		
<b>13. Operational Controls Summary</b>			
<b>Currently in Force:</b>			
Safety Zone around debris field			
Temporary Flight Restriction in search area			

**14. HAZMAT/Oil Status**

-Estimate 900 gals of JP-8 per aircraft onboard at time of incident  
-NOAA oil fate analysis estimates 90% of fuel evaporated or naturally dispersed w/in 6-12 hrs from being released.  
-Reports of oil impact to land were investigated. Investigators arrived on-scene with reporting party and could not locate any impacted shoreline; report of oil impact deemed inaccurate.

**15. Critical Resource Status:**

All critical resources operational.

**16. Critical Resource Status: Communications (significant damage and/or impact):**

NSTR

**17. Prepared by:**

(b)(6) (b) (3) 10 USC § 130b

**18. Unified Command Approval:**

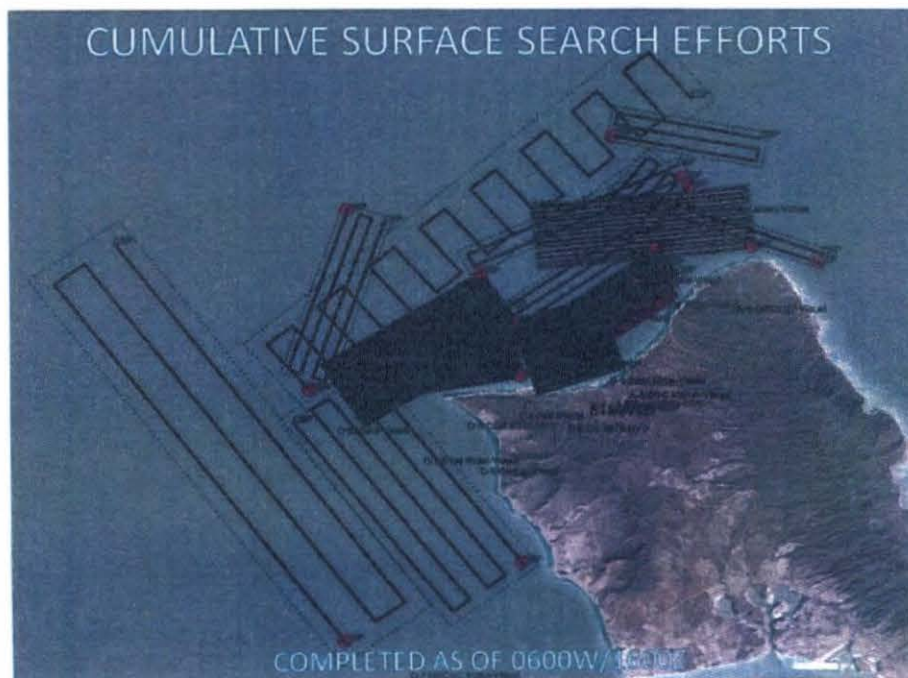
(b)(6) (b) (3) 10 USC § 130b

(b)(6) (b) (3) 10 USC § 130b

## CUMULATIVE AIR SEARCH EFFORTS



## CUMULATIVE SURFACE SEARCH EFFORTS





# USMC Waimea Bay Aircraft Incident 2016

## ICS 209 Incident Status Summary 03

This format is approved by PACAREA for situational reporting vice the SITREP template.

<b>1. Incident Name</b> USMC Waimea Bay Aircraft Incident 2016	<b>2. Operational Period (Date / Time)</b> From: 16Jan16 0800 To: 16Jan16 2000 Time of Report: 1800W	<b>INCIDENT STATUS</b> <b>SUMMARY ICS 209</b> T/H -CG
<b>3. Type of Incident: SAR</b>		
<b>4. Situation Summary:</b> Sector Honolulu received two reports of flare sightings in the vicinity Waimea Bay, Oahu. Reports were correlated to two overdue USMC CH-53 aircraft with 12 Marines onboard who were conducting training in the area. JRCC initiated a CIC (Critical Information Call) call, and launched ASBP MH-65 and HC-130 to investigate; HSM-37 (Easy Rider-41), Honolulu FD Air-1, 2 Honolulu FD Surface Asset, Honolulu PD Police-1, CGC KISKA, CGC AHI, and two USN Warships have responded. Initial on scene reports indicated a large debris field centered around a life raft with no POB, metal fragments, fire on the water, and a strong fuel scent. Both helicopters involved in the incident are from Heavy Helicopter Squadron 463.		
<b>Current Operations:</b> 2000W 15 Jan 2016 - Unified Command (CG/USMC) provided initial brief to local families on search efforts, status and dedicated resources at the Kaneohe Marine Corps Base Hawaii Chapel. USCG liaisons remain in place at the ICP in Haleiwa and at the Marine Corps Base Hawaii EOC. Surface assets on scene include CGC KISKA, CGC AHI, USS GRIDLEY, USS JOHN PAUL JONES. USS GRIDLEY responsible for airspace management and acting as OSC (On-Scene Commander) with embarked CG LT from Sector Honolulu. Air assets including ASBP C130, ASBP H65, and USN HSM 37 in place and searching. 2030W USN HSM 37 secured for evening. 2100W ICP at Haleiwa, HI with Honolulu Fire Department, Ocean Safety and Honolulu Police Department secured until 16 Jan 0630W from shoreline searches.		
1500W 16 Jan 2016 - Search efforts continued with air and surface assets. Air assets on-scene actively searching to include USAF P-3, U.S. Army HH-60, U.S. Navy HH-60, HFD Air-1, USCG MH-65, and USCG C-130. Surface assets on-scene to include CGC AHI, CGC KISKA, USS JOHN PAUL JONES, USS GRIDLEY, and Ocean Safety jet skis. CG LNO at ICP in Haleiwa continues to provide D14 ICP updates on shoreline and shoreside search efforts. 0800W Unified Command made decision to allow boating traffic through safety zone, but to emphasize educating boating public to ensure their safety and to utilize them as a force multiplier. MSST Honolulu deployed two personnel to conduct dockside walks at Haleiwa small boat harbor and boat ramp to hand out educational fliers and to advise public of numbers to make debris reports and/or any signs of distress. Seven (10) person USMC teams have conducted shoreline searches throughout the day from Kaena Point to Kuhuku Point. 1200W Unified Command directed USS JOHN PAUL JONES to proceed to LKP of helicopters from Air Force Rescue Coordination Center's Radar Analysis product and utilize any available technology (including sonar) search for the helicopters sub surface.		
<b>5. Weather Forecast:</b>  <b>NOAA WX Service:</b>  <b>16Jan16 1200:</b>  ...Small craft advisory in effect through early 17Jan16...  <b>Rest Of Today:</b> Isolated showers. Mostly cloudy, with a high near 78. Chance of precipitation is 20%. North winds 10 kt. Wind waves 2 ft or less. Northwest swell 17 ft decreasing to 13 ft early in the afternoon.  <b>Tonight:</b> Partly cloudy, with a low around 63. Northeast winds 10 kt. Wind waves 2 ft or less. Northwest swell 11 ft.		

**Sunday:** Isolated showers after noon. Increasing clouds, with a high near 78. Chance of precipitation is 20%. East winds 10 kt in the morning becoming variable less than 10 kt. Wind waves 2 ft or less. Northwest swell 9 ft.

**6. Command Objectives:**

- Provide for the safety and security of responders and maximize protection of public
- Conduct joint SAR efforts to include air space de-confliction, survival accountability, and life-saving assistance, evacuation, and triage of survivors
- Continue ongoing Family Assistance and responder programs to include joint family briefings and Critical Incident Stress Management (CISM) support
- Implement scene integrity and coordinate debris containment for incident investigation purposes
- Request resource assistance and develop assessment plan to identify aircraft location to support SAR efforts
- Develop transition plan from SAR to Salvage phases
- Manage Unified Command response efforts and ensure IMT relief schedules
- Inform the public, stakeholders, and the media of response activities

**Operational Period:**

- 16 January 2016/ 0800 to 16 January 2016/ 2000

**Unified Command:**

- U.S. Coast Guard D14
- U.S. Marine Corps Air Group 24

**Priorities:**

- Safety of Responders & Public
- Incident stabilization & Unified Command establishment
- Security
- Information Management

**Limitations/Constraints:**

- Potential for adverse weather (strong winds, wave height)
- Critical Information handling
- Crew rest requirements
- Interagency communications/connectivity
- Evidence preservation requirements

**Command Emphasis:** For this operational period, our continued emphasis will be to conduct safe response operations, especially in aircraft air space de-confliction. IC shall be immediately notified of any mishaps, injuries to responders, discoveries or sightings (debris or other), or major asset coverage gaps.

**7. Future Plan:** Execute air tasking order and associated search action plan for 16Jan16. Adapt search action plans on basis of debris found. Provide ICS-209 once daily. Family brief to be conducted by USCG/USMC unified command at 1900W daily. Continue search in coordination with USMC. Naval asset tasking being revised to continue support of SAR efforts. USMC requested and PACOM has approved request for USN sub-surface search capability. PACFLT working to source from either 3<sup>rd</sup> or 7<sup>th</sup> Fleet. Intention is to employ sub-surface search capability to locate aircraft and determine if any crewmembers remain onboard. USMC continues to lead shore side branch, salvage, and investigation groups with HPD and HFD support.

USS GRIDLEY will depart at 1810W this evening. USS JOHN PAUL JONES will depart the morning of 17JAN16 after conducting an onsite relief with USS PAUL HAMILTON. (b) (3) 10 US will be transferred from USS GRIDLEY to USS JOHN PAUL JONES the evening of 16JAN16. (b) (3) 10 US will be removed from USS JOHN PAUL JONES the morning of 17JAN16 and (b) (3) 10 USC will deploy to USS PAUL HAMILTON.



<b>8. Personnel Accountability:</b>			
	<b>Total</b>	<b>Unaccounted</b>	<b>% Accounted For</b>
USMC CH-53 #1	6	6	0%
USMC CH-53 #2	6	6	0%
<b>Total</b>	<b>12</b>	<b>12</b>	<b>0%</b>
<b>9. Personnel Casualties:</b> (i.e. reference msg traffic. No names or ID#'s) NSTR			
<b>10. Type of Event:</b>			
<input type="checkbox"/> Oil/HAZMAT	<input type="checkbox"/> Civil Disturbance	<input checked="" type="checkbox"/> SAR/LE	
<input type="checkbox"/> Marine Disaster	<input type="checkbox"/> Military Out load	<input type="checkbox"/> Other: Heavy Weather	
<b>11. Critical Resource Status:</b>			
CG WPB '87	CGC AHI U/W		
CG WPB '110	CGC KISKA U/W		
USN DDG	USS JOHN PAUL JONES U/W		
USN DDG	USS GRIDLEY U/W		
CG HH-65	CG Rescue 6547 Operational		
CG C-130	CG Rescue 1719, 1707 Operational		
<b>D14 Command Post</b>	USCG - 54		
	USMC - 1		
	HFD - 0		
	HPD - 0		
	Total - 55		
<b>12. Sorties/Patrols Summary: (****list of sorties since last report****)</b>			
<b>Air:</b>			
Number of Sorties/Patrols	12		
Area Covered (square nautical miles)	3,767 SQ. NM		
<b>Surface:</b>			
Number of Sorties/Patrols	4		
Area Covered (square nautical miles)	330 SQ. NM		
Cumulative Area covered	9,138 SQ. NM		
Cumulative Joint SAR Plan POS	51%		
<b>13. Operational Controls Summary</b>			
<b>Currently in Force:</b>			
Safety Zone around debris field			
Temporary Flight Restriction in search area			

**14. HAZMAT/Oil Status**

- Estimate 900 gals of JP-8 per aircraft onboard at time of incident
- NOAA oil fate analysis estimates 90% of fuel evaporated or naturally dispersed w/in 6-12 hrs from being released.
- Reports of oil impact to land were investigated. Investigators arrived on-scene with reporting party and could not locate any impacted shoreline; report of oil impact deemed inaccurate.

**15. Critical Resource Status:**

All critical resources operational.

**16. Critical Resource Status: Communications (significant damage and/or impact):**

NSTR

**17. Prepared by:**

(b)(6) (b) (3) 10 USC § 130b

**18. Unified Command Approval:**

(b)(6) (b) (3) 10 USC § 130b

(b)(6) (b) (3) 10 USC § 130b







## USMC Waimea Bay Aircraft Incident 2016

### ICS 209 Incident Status Summary 06 and Final

This format is approved by PACAREA for situational reporting vice the SITREP template.

<b>1. Incident Name</b> USMC Waimea Bay Aircraft Incident 2016	<b>2. Operational Period (Date / Time)</b> From: 18Jan16 2000 To: 19Jan16 1813 Time of Report: 1500W	<b>INCIDENT STATUS</b> <b>SUMMARY ICS 209</b> <b>T/H -CG</b>
<b>3. Type of Incident: SAR</b>		
<b>4. Situation Summary:</b> Sector Honolulu received two reports of flare sightings in the vicinity Waimea Bay, Oahu. Reports were correlated to two overdue USMC CH-53 aircraft with 12 Marines onboard who were conducting training in the area. JRCC initiated a CIC (Critical Information Call) call, and launched ASBP MH-65 and HC-130 to investigate; HSM-37 (Easy Rider-41), Honolulu FD Air-1, 2 Honolulu FD Surface Asset, Honolulu PD Police-1, CGC KISKA, CGC AHI, and two USN Warships responded. Initial on-scene reports indicated a large debris field centered around a life raft with no POB, metal fragments, fire on the water, and a strong fuel scent. Both helicopters involved in the incident are from Heavy Helicopter Squadron 463.		
<b>Previous/Current Operations:</b>  <b>2000W 18 Jan 16-</b> Unified Command (CG/USMC) provided fourth nightly briefing to local families on search efforts, status and dedicated resources at the Kaneohe Marine Corps Base Hawaii Chapel. Personnel notifications have been made to all family members. USCG liaisons remain in place at the ICP in Haleiwa and at the Marine Corps Base Hawaii EOC. Surface assets on-scene include: USS PAUL HAMILTON (PH) and USCGC AHI. PH responsible for airspace management and acting as OSC (On-Scene Commanders). Air assets on-scene include C-130 and H-65. Anticipate Navy P-3 on scene at 0500W 19 Jan 16. Over 100 various items of debris have been documented, recovered debris residing at Marine Corps Base Hawaii in Kaneohe.		
<b>1500W 19 Jan 16-</b> Conducted 209 briefing to Unified Commanders. 0830W SMC led ACTSUS briefing to Unified Commanders, at completion CG SAR Coordinator granted ACTSUS for sunset (1813W) on Tuesday 19JAN16 pending new developments. MSDU-1 commenced operations with 02 ROVs. Bulk wreckage site located in position 21-38.010N 158-07.538W. ROV operators report seeing multiple pieces believed to be associated with this case including the following: rotor blade, seat, potential fuselage, helicopter tail section. All images collected by USMC investigators. 1813W: Search & Rescue case suspended, all assets stood down and ordered to return to base. D14 ICP stood down. Sector Honolulu assumed responsibility to provide support within the scope of their authorities to USMC salvage effort.		



## **5. Weather Forecast:**

### **NOAA WX Service:**

19 Jan 2016 @ 1000 AM (HST)

#### **Today**

Northwest winds 10 kts. Wind waves 2 ft or less. North swell 7 ft.

#### **Tonight**

Northwest winds 10 kts. Wind waves 2 ft or less then 3 ft after midnight. North swell 8 ft increasing to northwest early in the morning. Isolated showers in the evening then scattered showers after midnight.

#### **Wednesday**

Northeast winds 15 kts. Wind waves 3 ft. Northwest swell 13 ft. Scattered showers in the morning then isolated showers in the afternoon.

#### **Wednesday Night**

Northeast winds 15 kts. Wind waves 3 ft. Northwest swell 10 ft. Isolated showers.

## **6. Command Objectives:**

- Provide for the safety and security of responders and maximize protection of public
- Conduct joint SAR efforts to include air space de-confliction, survival accountability, and life-saving assistance, evacuation, and triage of survivors
- Continue ongoing Family Assistance and responder programs to include joint family briefings and Critical Incident Stress Management (CISM) support
- Implement scene integrity and coordinate debris containment for incident investigation purposes
- Request resource assistance and develop assessment plan to identify aircraft location to support SAR efforts
- Develop transition plan from SAR to Salvage phases
- Manage Unified Command response efforts and ensure IMT relief schedules
- Inform the public, stakeholders, and the media of response activities

#### **Operational Period:**

- 18 January 2016/ 2000hrs to 19 January 2016/ 1813hrs

#### **Unified Command:**

- U.S. Coast Guard D14
- U.S. Marine Corps Air Group 24

#### **Priorities:**

- Safety of Responders & Public
- Incident stabilization & Unified Command establishment
- Security
- Information Management

#### **Limitations/Constraints:**

- Potential for adverse weather (strong winds, wave height)
- Critical Information handling
- Crew rest requirements
- Interagency communications/connectivity
- Evidence preservation requirements

**Command Emphasis:** For this operational period, our continued emphasis will be to conduct safe response operations, especially in aircraft air space de-confliction. IC shall be immediately notified of any mishaps, injuries to responders, discoveries or sightings (debris or other), or major asset coverage gaps.

We reiterate the importance of NOT DISTURBING any sea floor wreckage or debris during underwater operations.

**7. Future Plan:**

Secure the TFR upon suspension of search efforts. Sector Honolulu will provide LNO at ICP Haleiwa to provide continuity and serve as central point for any requests for CG assistance from USMC for assistance with revising safety zones, etc. Duration of LNO TBD.

**8. Personnel Accountability:**

	Total	Unaccounted	% Accounted For
USMC CH-53 #1	6	6	0%
USMC CH-53 #2	6	6	0%
<b>Total</b>	<b>12</b>	<b>12</b>	<b>0%</b>

**9. Personnel Casualties:** (i.e. reference msg traffic. No names or ID#'s)  
NSTR

**10. Type of Event:**

<input type="checkbox"/> Oil/HAZMAT	<input type="checkbox"/> Civil Disturbance	<input checked="" type="checkbox"/> SAR/LE
<input type="checkbox"/> Marine Disaster	<input type="checkbox"/> Military Out load	<input type="checkbox"/> Other: Heavy Weather

**11. Critical Resource Status:**

CG WPB '87	CGC AHI, U/W
USN DDG	USS PAUL HAMILTON, U/W
CG MH-65	CG Rescue 6547 Operational
CG C-130	CG Rescue 1719 Operational
USN P-3	P-3 Operational
Army H-60	
Navy H60	
USNS SALVOR	USNS SALVOR, U/W
MDSU-1	
<b>D14 Command Post</b>	USCG AD - 63
	USCG RSV-02
	USCG AUX - 04
	USCG Civilians- 03
	USMC - 02
	Total -74

**12. Sorties/Patrols Summary: (\*\*\*\*list of sorties since last report\*\*\*\*)**

**Air:**

Number of Sorties/Patrols	12
Area Covered (square nautical miles)	7427 SQ. NM

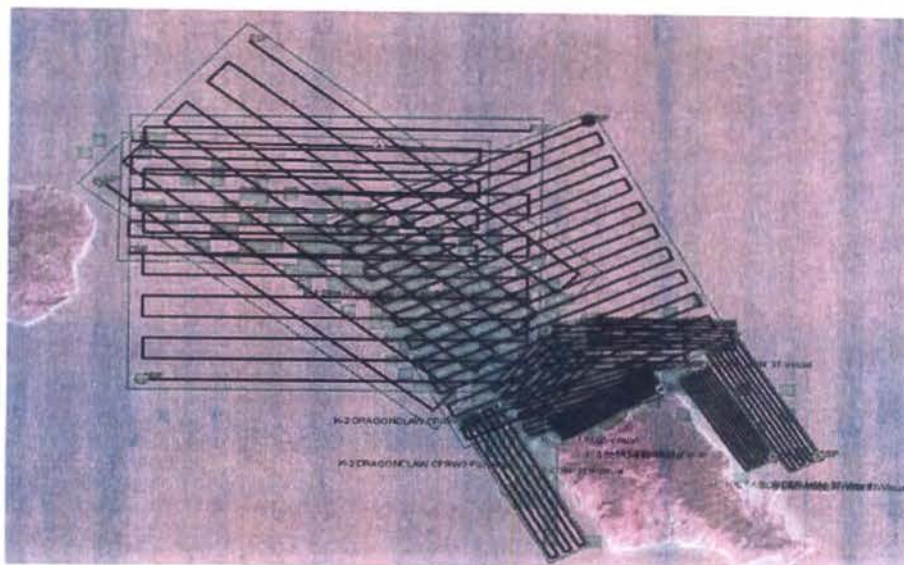
**Surface:**

Number of Sorties/Patrols	2
Area Covered (square nautical miles)	260 SQ. NM

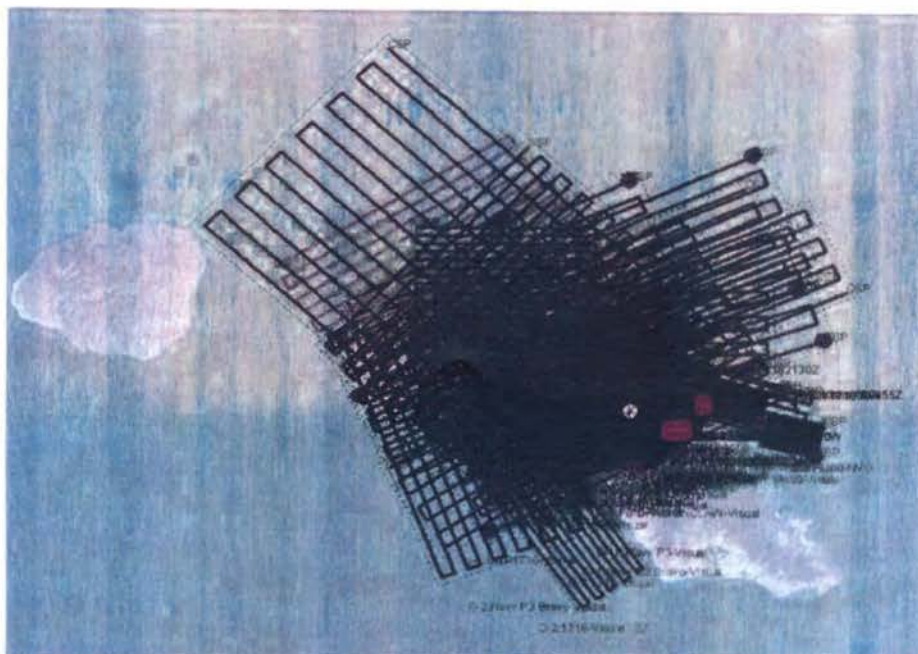
<b>Cumulative:</b>	
Cumulative Sorties	130
Cumulative Area covered	40,530 SQ. NM
Cumulative Joint SAR Plan POS	87%
<b>13. Operational Controls Summary</b>	
<b>Currently in Force:</b>	
Safety Zone around debris field	
Temporary Flight Restriction in search area	
<b>14. HAZMAT/Oil Status</b>	
-Estimate 900 gals of JP-8 per aircraft onboard at time of incident -NOAA oil fate analysis estimates 90% of fuel evaporated or naturally dispersed w/in 6-12 hrs from being released. -Reports of oil impact to land were investigated. Investigators arrived on-scene with reporting party and could not locate any impacted shoreline; report of oil impact deemed inaccurate.	
<b>15. Critical Resource Status:</b>	
All critical resources operational.	
<b>16. Critical Resource Status: Communications (significant damage and/or impact):</b>	
NSTR	
<b>17. Prepared by:</b>	
(b)(6) (b) (3) 10 USC § 130b	
<b>18. Unified Command Approval:</b>	
(b)(6) (b) (3) 10 USC § 130b	(b)(6) (b) (3) 10 USC § 130b



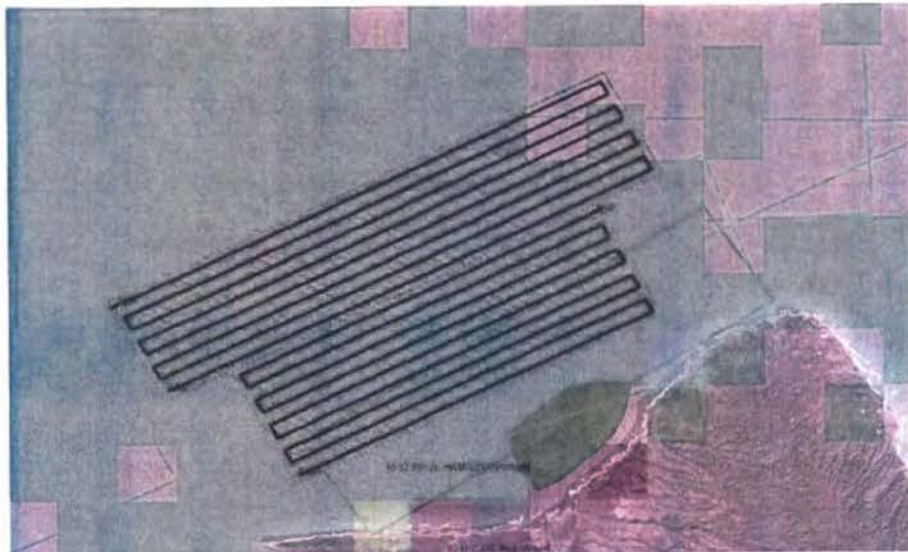
## Day 5 Air Search



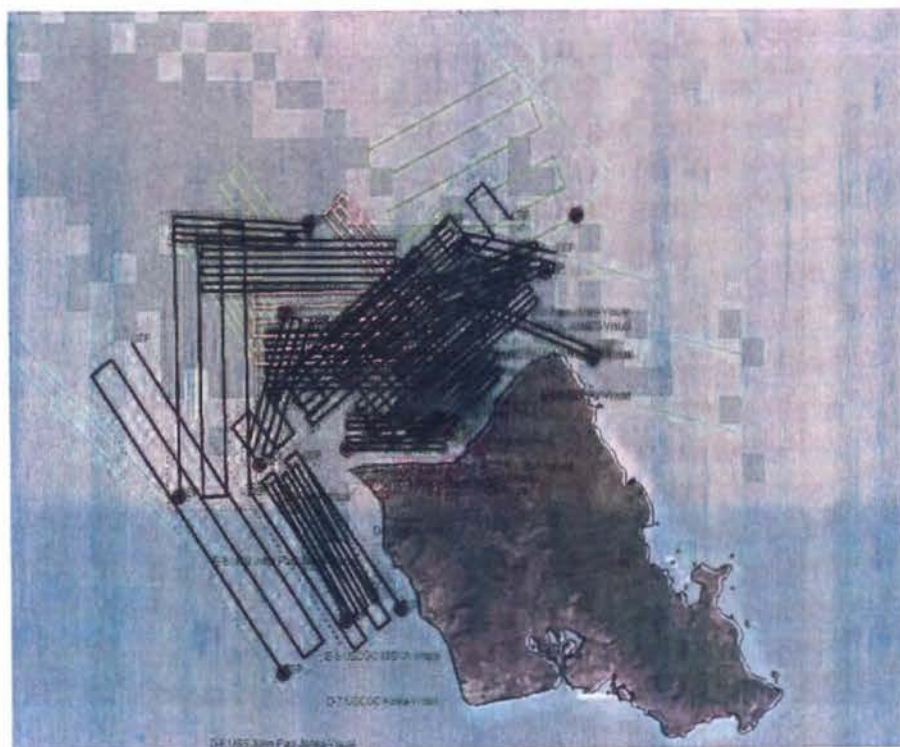
## Cumulative Air Search



### Day 5 Surface Search

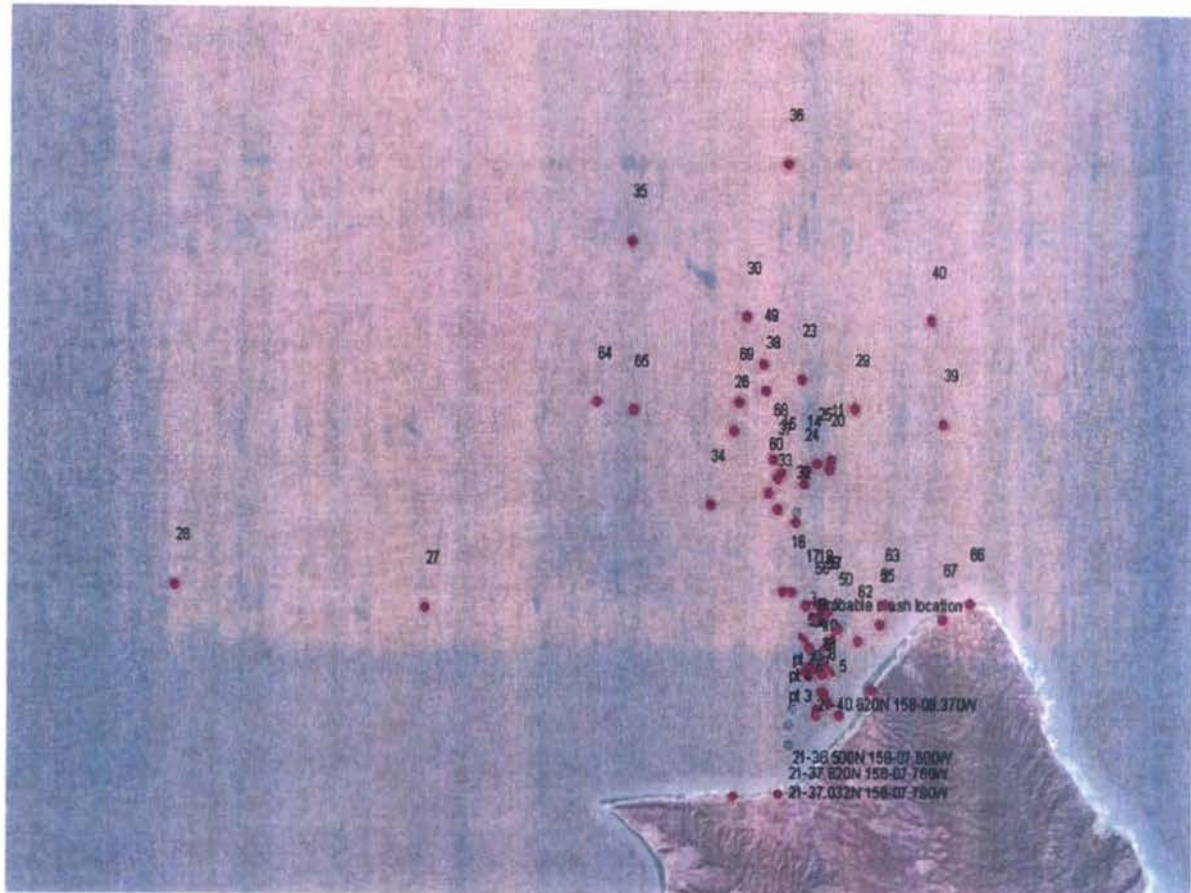


### Cumulative Surface Search



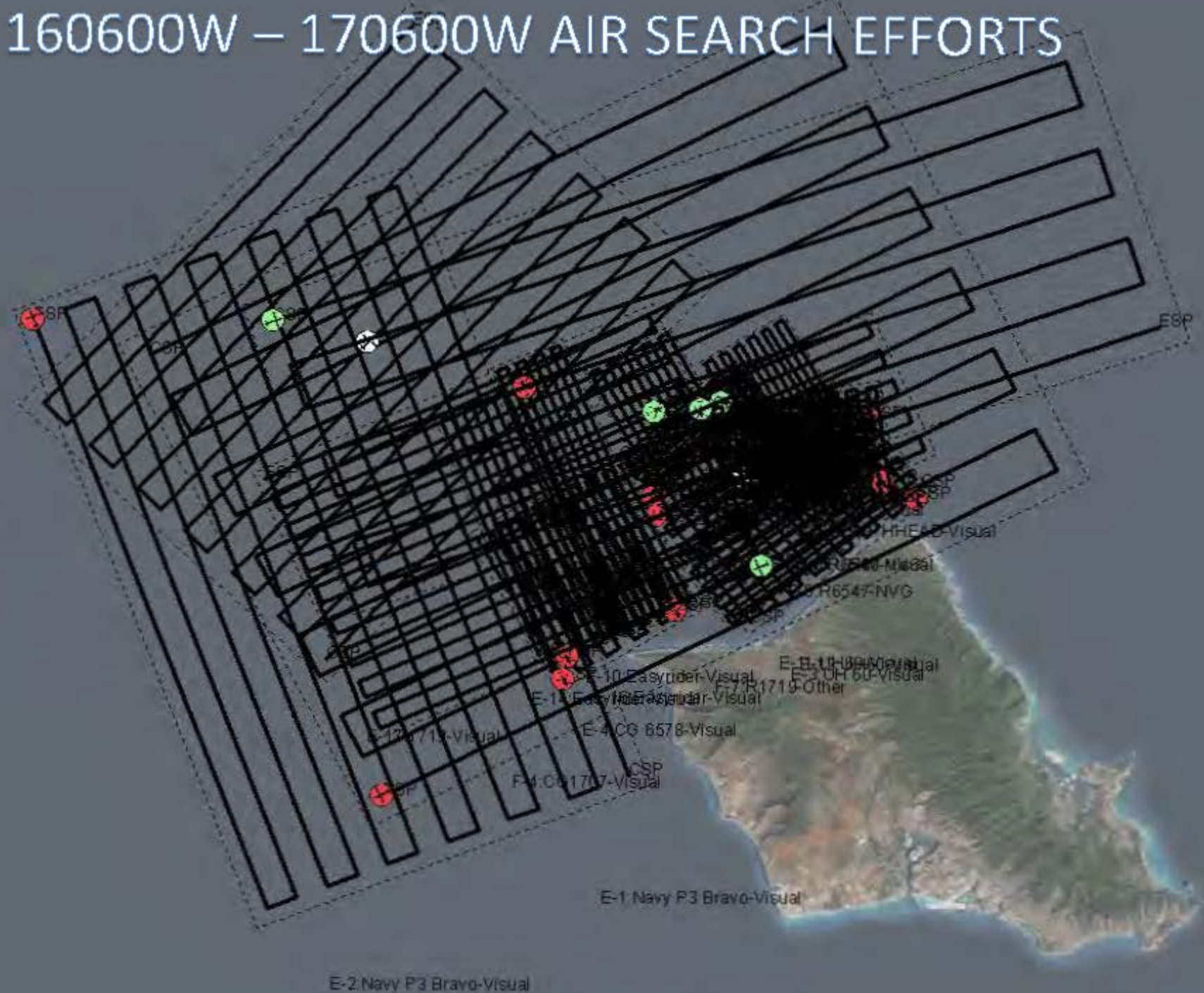


## Debris Locations



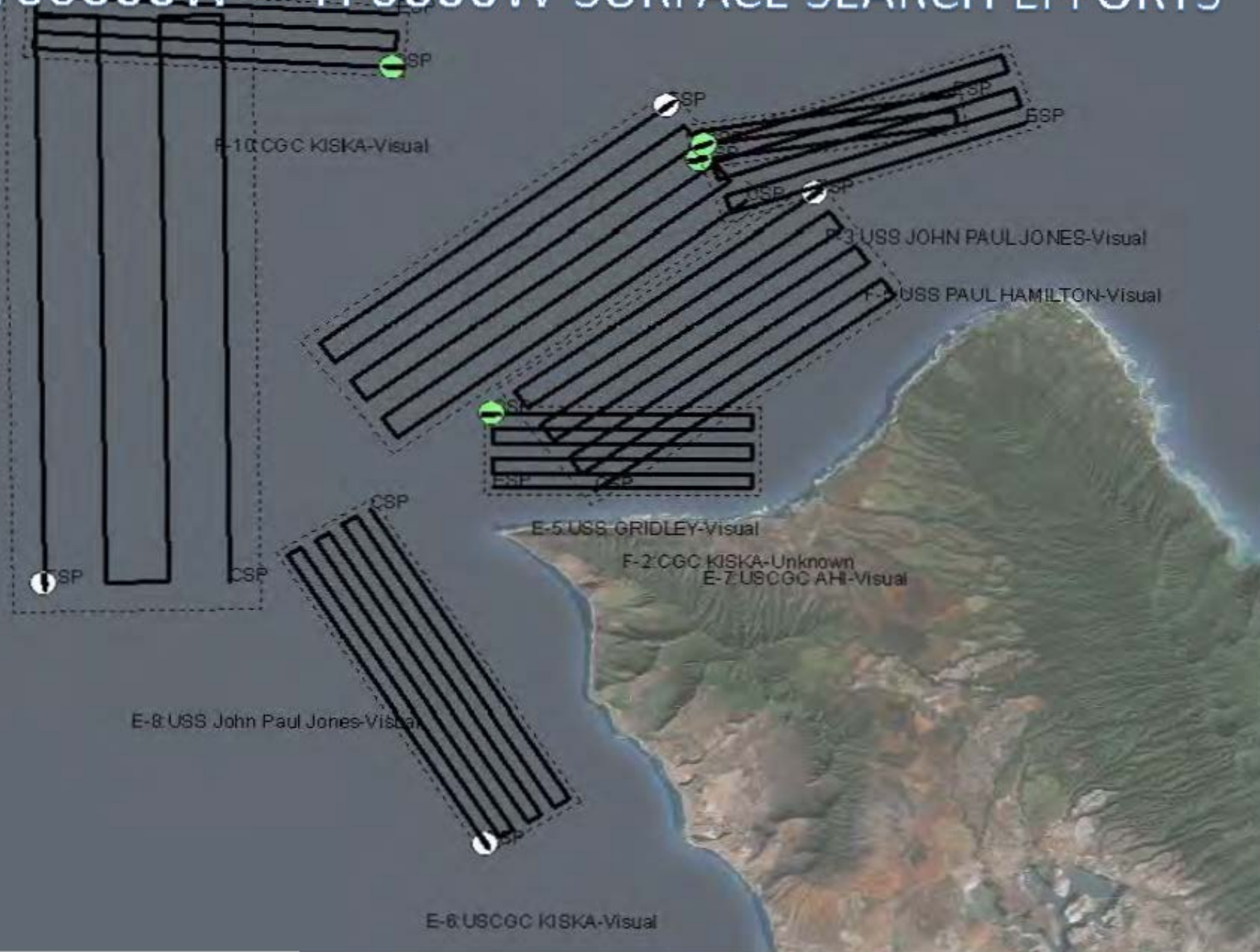


## 160600W – 170600W AIR SEARCH EFFORTS

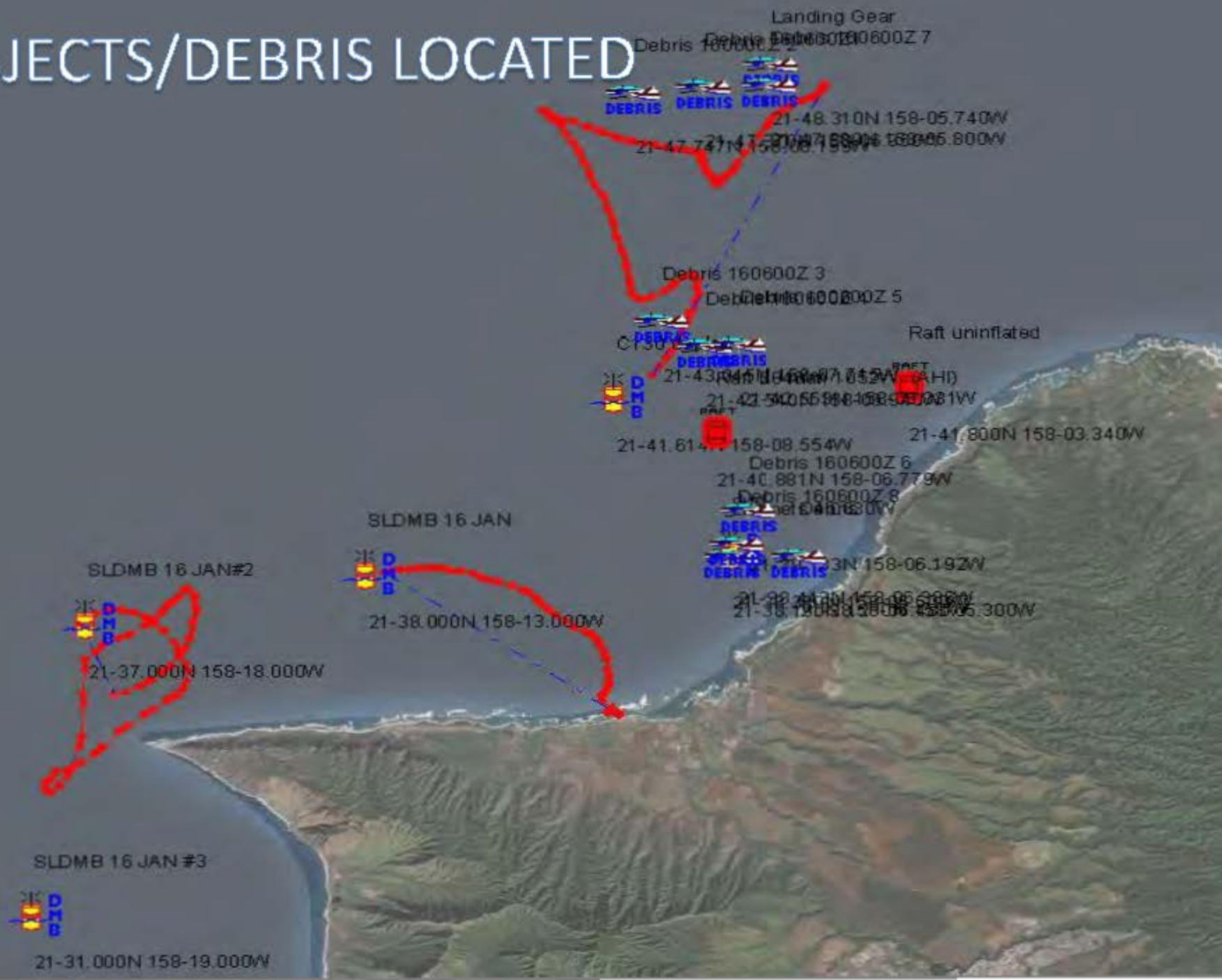




# 160600W – 170600W SURFACE SEARCH EFFORTS



# OBJECTS/DEBRIS LOCATED





# COMPLETED SEARCHES AS OF 171600Z

Prefix	SRU ID	Descriptor	Type	CST	EST	% Comp	Track Length Searched	Area Searched	Reviewed
F-1	UH60	Visual	PS	170450Z JAN 2016	170629Z JAN 2016	100%	119 NM	36 SQNM	Yes
F-2	CGC KISKA	Visual	PS	170500Z JAN 2016	170957Z JAN 2016	100%	50 NM	26 SQNM	Yes
F-3	USS JOHN PAUL JONES	Visual	PS	170330Z JAN 2016	171021Z JAN 2016	100%	25 NM	13 SQNM	Yes
F-4	CG1707	Visual	PS	170441Z JAN 2016	170714Z JAN 2016	100%	458 NM	505 SQNM	Yes
F-5	USS PAUL HAMILTON	Visual	PS	171045Z JAN 2016	171526Z JAN 2016	100%	50 NM	31 SQNM	Tentative
F-6	UH60 HHEAD	Visual	PS	170610Z JAN 2016	170944Z JAN 2016	100%	153 NM	61 SQNM	Yes
F-7	R1719	Other	PS	170750Z JAN 2016	171018Z JAN 2016	100%	379 NM	1147 SQNM	Tentative
F-8	R6547	NVG	CS	171000Z JAN 2016	171159Z JAN 2016	100%	153 NM	92 SQNM	Tentative
F-9	R6547	NVG	PS	171230Z JAN 2016	171429Z JAN 2016	100%	152 NM	153 SQNM	Tentative
F-10	CGC KISKA	Visual	PS	170930Z JAN 2016	171455Z JAN 2016	100%	46 NM	28 SQNM	Tentative
E-1	Navy P3 Bravo	Visual	PS	161400Z JAN 2016	161659Z JAN 2016	100%	592 NM	1726 SQNM	Yes
E-2	Navy P3 Bravo	Visual	PS	161715Z JAN 2016	162144Z JAN 2016	100%	550 NM	1105 SQNM	Yes
E-3	UH 60	Visual	CS	161800Z JAN 2016	161959Z JAN 2016	100%	135 NM	136 SQNM	Yes
E-4	CG 6578	Visual	PS	161600Z JAN 2016	161729Z JAN 2016	100%	114 NM	115 SQNM	Yes
E-5	USS GRIDLEY	Visual	PS	161700Z JAN 2016	170254Z JAN 2016	100%	84 NM	68 SQNM	Yes
E-6	USCGC KISKA	Visual	PS	161700Z JAN 2016	170256Z JAN 2016	100%	84 NM	42 SQNM	Yes
E-7	USCGC AHI	Visual	PS	161700Z JAN 2016	170255Z JAN 2016	100%	84 NM	59 SQNM	Yes
E-8	USS John Paul Jones	Visual	PS	161700Z JAN 2016	170246Z JAN 2016	100%	83 NM	161 SQNM	Yes
E-9	6547	Visual	PS	161800Z JAN 2016	161929Z JAN 2016	100%	115 NM	35 SQNM	Yes
E-10	Easyrider	Visual	PS	162000Z JAN 2016	162159Z JAN 2016	100%	152 NM	92 SQNM	Yes
E-11	UH60	Visual	PS	162030Z JAN 2016	162229Z JAN 2016	100%	152 NM	122 SQNM	Yes
E-12	UH60	Visual	PS	162200Z JAN 2016	162359Z JAN 2016	100%	152 NM	92 SQNM	Yes
E-13	6578	Visual	PS	162215Z JAN 2016	162344Z JAN 2016	100%	114 NM	69 SQNM	Yes
E-14	Easyrider	Visual	PS	162230Z JAN 2016	170029Z JAN 2016	100%	152 NM	107 SQNM	Yes
E-15	UH60	Visual	PS	170000Z JAN 2016	170159Z JAN 2016	100%	152 NM	76 SQNM	Yes
E-16	Easyrider	Visual	PS	170030Z JAN 2016	170229Z JAN 2016	100%	152 NM	92 SQNM	Yes
E-17	1719	Visual	PS	170130Z JAN 2016	170429Z JAN 2016	100%	457 NM	918 SQNM	Yes

# COMPLETED SEARCHES AS OF 171600Z

D-1	1716	Visual	PS	160712Z JAN 2016	160729Z JAN 2016	100%	304 NM	520 SQNM	Yes
D-2	1716	Visual	PS	160830Z JAN 2016	161059Z JAN 2016	100%	382 NM	460 SQNM	Yes
D-3	1716	Visual	PS	161130Z JAN 2016	161359Z JAN 2016	100%	380 NM	956 SQNM	Yes
D-4	AHI	Visual	PS	151102Z JAN 2016	160525Z JAN 2016	100%	67 NM	41 SQNM	Yes
D-5	Gridley	Visual	CS	160600Z JAN 2016	161547Z JAN 2016	100%	83 NM	153 SQNM	Yes
D-6	USS John Paul Jones	Visual	PS	160600Z JAN 2016	161545Z JAN 2016	100%	83 NM	170 SQNM	Yes
D-7	USCGC Kiska	Visual	PS	160800Z JAN 2016	161651Z JAN 2016	100%	75 NM	92 SQNM	Yes
D-8	CG 6578	NVG	PS	160900Z JAN 2016	161015Z JAN 2016	87%	100 NM	20 SQNM	Yes
D-9	CGR 6578	NVG	PS	161030Z JAN 2016	161159Z JAN 2016	100%	115 NM	23 SQNM	Yes
D-10	Navy P3	Visual	PS	161500Z JAN 2016	161758Z JAN 2016	100%	507 NM	1480 SQNM	Yes
D-11	CG 6578	NVG	PS	161400Z JAN 2016	161529Z JAN 2016	100%	114 NM	46 SQNM	Yes
C-1	Easy Rider	Visual	PS	160005Z JAN 2016	160204Z JAN 2016	100%	153 NM	46 SQNM	Yes
C-2	Kiska	Visual	PS	160010Z JAN 2016	160352Z JAN 2016	100%	20 NM	14 SQNM	Yes
C-3	John Paul Jones	Visual	PS	160030Z JAN 2016	160325Z JAN 2016	100%	25 NM	18 SQNM	Yes
C-4	6547	Visual	CS	160030Z JAN 2016	160129Z JAN 2016	100%	76 NM	23 SQNM	Yes
C-5	6578	Visual	PS	160200Z JAN 2016	160359Z JAN 2016	100%	153 NM	46 SQNM	Yes
C-6	AHI	Visual	PS	160100Z JAN 2016	160420Z JAN 2016	100%	17 NM	14 SQNM	Yes
C-7	Easy Rider	Visual	PS	160230Z JAN 2016	160529Z JAN 2016	100%	229 NM	46 SQNM	Yes
C-8	Kiska	Visual	PS	151230Z JAN 2016	160341Z JAN 2016	100%	42 NM	30 SQNM	Yes
B-1	1719	Visual	PS	151815Z JAN 2016	151859Z JAN 2016	100%	152 NM	199 SQNM	Yes
B-2	1719	Visual	PS	151900Z JAN 2016	151959Z JAN 2016	100%	151 NM	244 SQNM	Yes
B-3	1719	Visual	PS	152000Z JAN 2016	152029Z JAN 2016	100%	136 NM	137 SQNM	Yes
B-4	1719	Visual	PS	152030Z JAN 2016	152044Z JAN 2016	100%	105 NM	139 SQNM	Yes
B-5	Easy Rider	Visual	PS	151930Z JAN 2016	152129Z JAN 2016	100%	152 NM	15 SQNM	Yes
B-6	6547	Visual	PS	151830Z JAN 2016	151929Z JAN 2016	100%	77 NM	8 SQNM	Yes
B-7	CGC AHI	Visual	PS	151930Z JAN 2016	160022Z JAN 2016	100%	21 NM	11 SQNM	Yes
B-8	6547	Visual	PS	152100Z JAN 2016	152259Z JAN 2016	100%	118 NM	35 SQNM	Yes
A-2	65	NVG	PS	151300Z JAN 2016	151349Z JAN 2016	25%	48 NM	5 SQNM	Yes
A-3	Easy Rider	NVG	PS	151200Z JAN 2016	151259Z JAN 2016	100%	77 NM	8 SQNM	Yes
A-4	JONES JP	Visual	PS	151430Z JAN 2016	151701Z JAN 2016	100%	26 NM	21 SQNM	Yes
A-5	CGC KISKA	Visual	PS	151530Z JAN 2016	151727Z JAN 2016	100%	20 NM	10 SQNM	Yes
A-6	GRIDLEY	Visual	PS	151530Z JAN 2016	151726Z JAN 2016	100%	20 NM	12 SQNM	Yes
X-18	CG1707	Visual	PS	170830Z JAN 2016	171029Z JAN 2016	100%	381 NM	497 SQNM	Yes
<b>Total</b>							9321 NM	12643 SQNM	



# PLANNING POS REPORT

Search Object	Number Adrift	Number on Land	Conditional POS	Object Probability	Joint POS	Remaining Probability
PIW w/PFD Avg	557	1110	86%	33%	29%	5%
Boating Debris	584	1083	66%	33%	22%	11%
PIW Deceased	565	1101	74%	33%	25%	9%
TOTAL	1706	3294	—	99%	75%	25%

## Key:

**Number Adrift:** Number of simulation particles adrift or anchored at 171700Z JAN 2016.

**Number on Land:** Number of simulation particles on land at 171700Z JAN 2016.

**Conditional POS:** Cumulative Probability to date of the search object being located, assuming it is the given type.

**Object Probability:** Likelihood a search object of the given type resulted from the distress incident (based on search object and scenario weighting).

**Joint POS:** Cumulative Probability to date of the search object resulting from the distress incident being the given type AND being found (equals Conditional X Object.)

**Remaining Probability:** Cumulative Probability to date of the search object resulting from the distress incident being the given type and remaining unlocated, considering all previous searches (equals Object - Joint.)

**Total Joint POS:** Cumulative Probability to date of finding any search object that is one of the given types (sum of all search object Joint POS values.)

**Total Remaining Probability:** Cumulative Probability to date that any search object described within the run remains to be found.



**17JAN2016 TOTAL SEARCH EFFORT**

**TOTAL NUMBER OF SORTIES: 78**

**TOTAL AREA SEARCHED: 15,956 SQ NM**

**SEARCH ASSETS:**

**U.S. COAST GUARD**

**USCGC KISKA, USCGC AHI, HH-65  
HELICOPTER, C-130 AIRPLANE**

**US. ARMY**

**H-60 HELICOPTER**

**US. NAVY**

**P-3, AIRPLANE, H-60 HELICOPTER,  
ONE WARSHIP**

**USMC**

**7 (10-MAN) SHORELINE TEAMS**

**STATE**

**HFD FIRE BOAT, HFD HELICOPTER,  
POLICE HELICOPTER, OCEAN SAFETY  
JET SKIS, LIFE GUARDS**







# Surface Searches up to 171800W JAN

