



**DEPARTMENT OF THE NAVY**  
COMMANDER  
UNITED STATES PACIFIC FLEET  
250 MAKALAPA DRIVE  
PEARL HARBOR HI 96860-3131

IN REPLY REFER TO:  
5830  
Ser N00/0753  
2 Jul 21

SECOND ENDORSEMENT on RDML Sweeney ltr 5830 of 4 Jun 21

From: Commander, U.S. Pacific Fleet  
To: Vice Chief of Naval Operations

Subj: COMMAND INVESTIGATION INTO THE FACTS AND CIRCUMSTANCES  
SURROUNDING THE 30 JULY 2020 ASSAULT AMPHIBIOUS VEHICLE MISHAP  
DURING INTEGRATED OPERATIONS BETWEEN THE 15<sup>TH</sup> MARINE  
EXPEDITIONARY UNIT AND THE USS SOMERSET (LPD 25)

Encl: (98) COMNAVSURFOR message 252040Z JUN 21  
(99) CMC PPO message 092116Z APR 21

1. Forwarded in accordance with references (a) and (b).
2. Our fallen shipmates served with honor and distinction. We remember:

Private First Class Evan A. Bath  
Private First Class Bryan J. Baltierra  
Lance Corporal Marco A. Barranco  
Navy Hospital Corpsman 3rd Class (Fleet Marine Force) Christopher Gnem  
Private First Class Jack-Ryan Ostrovsky  
Lance Corporal Guillermo S. Perez  
Corporal Wesley A. Rodd  
Lance Corporal Chase D. Sweetwood  
Corporal Cesar A. Villanueva

Their tragic deaths remind us of the dangerous duty performed by the members of our all-volunteer force, and of the vital responsibility of leaders to identify and effectively address risk inherent in military service.

3. Under the leadership of Rear Admiral Christopher Sweeney and Colonel Trevor Hall, the investigation team of Navy and Marine Corps subject matter experts satisfied your direction to address specific factors involving U.S. Navy personnel that potentially contributed to the mishap. I concur with the findings of fact, the opinions, and the recommendations with the following additions:

a. Finding of Fact 50: Modified to read "Advanced Change Notice Two (ACN 2) for Wet Well Operations was released 25 June 21 and its requirements were effective immediately. [Encl. (98)]"

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b. Finding of Fact 51: Enclosure (98) replaces enclosure (17) and the language of the opening clause is modified to read: "ACN 2 implemented the following changes:"

c. Recommendation 13: Revise JAGINST 5800.7G to include a requirement for representation by Navy and Marine Corps personnel on investigations into Class A mishaps that occur during integrated Navy-Marine Corps operations and training.

4. The Navy and the Marine Corps investigations established that poorly maintained AAVs, inadequately trained personnel, and the failure to conduct a timely egress caused the sinking of the AAV and the tragic loss of life.

5. As established by this investigation, the actions and inactions on the part of SOMERSET were not fully in accordance with doctrine and established procedures; and the investigation identified gaps in our doctrine and procedures.

6. Unless otherwise directed, I intend to take administrative action in the cases of the CATF, SOM CO, and the TAO.

7. To address the elements of the Navy's deficiency in the application of doctrine and the execution of amphibious operations, the Commander, Naval Surface Forces, by enclosure (98) and implementation of this investigation's recommendations, has taken immediate actions (among others in the investigation and enclosures):

a. To ensure a more rapid response capability, safety boats are now required whenever AAVs operate with Navy shipping. AAVs may no longer be used as safety boats.

b. To ensure positive control by the PCS: (1) prior to waterborne AAV operations, communications plans must be briefed with all participants present (the Wave Commander, the Primary Control ship, and safety boat personnel). (2) the ship's bridge must monitor all communications; (3) only the CO or designated PCO can authorize AAV splash from ship and shore and only after receiving standardized pre-splash briefs from the AAV Wave Commander; (4) AMW certification will be immediately modified to require CIC and boat control team demonstrations of positive control in both ship-to-shore and shore-to ship movements.

c. To limit the risk associated with simultaneous shipboard operations during AAV operations, (1) PMINT evolutions are being re-evaluated to ensure the required schedule of events is appropriate to the "crawl" phase of the "crawl, walk, run" training methodology; (2) an additional, dedicated, shipboard lookout will be stationed whenever AAVs are waterborne and shall regard them with the same procedures associated with monitoring a man-overboard.

d. To mitigate the effect of loss continuity associated with personnel transfers in the midst of the training cycle, (1) all prospective COs and XOs of Amphibious Class ships will be required to participate in the Senior Amphibious Warfare Officer's course with the integrated USN/USMC training module; (2) the XO/CO fleet-up assignment process of all Amphibious

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Class ships will be assessed to balance the CO/XO experience levels; (3) AMW (amphibious Warfare) will be included as a Watch Team Continuity Critical Warfare Area in order to maintain continuity of key positions for the Boat Control Teams; watchstanders will have these critical skills.

8. The implementation of these actions, and those previously employed by the Marine Corps in enclosure (99), assure the reconciliation of inconsistent practices among our two branches of the U.S. Naval Service, mitigate the risk of a future mishaps, and enhance our ability to respond more effectively if they do occur.



S. J. PAPARO



DEPARTMENT OF THE NAVY  
COMMANDER U.S. THIRD FLEET  
53690 TOMAHAWK DR STE 338  
SAN DIEGO, CALIFORNIA 92147-5004

IN REPLY REFER TO:

5830  
Ser N00/146  
22 Jun 21

FIRST ENDORSEMENT on RDML Sweeney ltr 5830 of 4 Jun 21

From: Commander, U.S. THIRD Fleet  
To: Vice Chief of Naval Operations  
Via: Commander, U.S. Pacific Fleet

Subj: COMMAND INVESTIGATION INTO THE FACTS AND CIRCUMSTANCES  
SURROUNDING THE 30 JULY 2020 ASSAULT AMPHIBIOUS VEHICLE MISHAP  
DURING INTEGRATED OPERATIONS BETWEEN THE 15TH MARINE  
EXPEDITIONARY UNIT AND THE USS SOMERSET (LPD 25)

Ref: (m) COMTHIRDFLT ltr 5830 Ser N00/099 of 26 Apr 21

1. Readdressed and forwarded in accordance with references (a) and (b). The enclosed investigation was tasked to RDML Christopher Sweeney, USN, in reference (m) and is forwarded for review and concurrence.
2. First and foremost, the findings of this investigation underscore the magnitude of the incredible loss of Private First Class Evan A. Bath, Private First Class Bryan J. Baltierra, Lance Corporal Marco A. Barranco, Navy Hospital Corpsman 3rd Class (Fleet Marine Force) Christopher Gnem, Private First Class Jack-Ryan Ostrovsky, Lance Corporal Guillermo S. Perez, Corporal Wesley A. Rodd, Lance Corporal Chase D. Sweetwood, and Corporal Cesar A. Villanueva to their families, the Navy-Marine Corps team, and the nation. This tragic event is a reminder that the work of our military is dangerous, not just in times of war, but also as we prepare to fight and win our nation's wars. We must tirelessly work to reduce the risks noted in this investigation to avoid such tragedies in the future.
3. Findings of Fact. I concur with all of the findings of fact (1-224).
4. Opinions. I concur with the opinions of the investigating officer except as noted below. After careful review and consideration, I conclude the issues addressed within this investigation were not causal or contributory to the sinking. I further conclude there are no findings that contradict the conclusion of reference (d) that the cause of the incident was a combination of maintenance failures, delayed evacuation, and improper training of embarked personnel. I fully concur with opinions 1-12, 14-15, and 17-18. I add the following comments, which correspond to the investigating officer's numbered opinions:
  - a. Opinion 13: I concur that in accordance with the Confirmation Brief, a USS SOMERSET (LPD 25) safety boat should have been in the water during Phase IV. However, I find the lack of a Navy safety boat did not cause or contribute to the loss of AAV 5. The effect that a Navy safety boat would have had is speculative. However, in light of AAV 14's proximity and quick response, AAV 14 likely still would have been the first to reach AAV 5, particularly if the Navy safety boat

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was in company with AAV 3 as it was being towed. Based on the overall circumstances at the time, it is unlikely that having a Navy safety boat in the water would have better prevented this tragedy.

b. Opinion 16: Leadership continuity and experience should always be considered when assessing risk for any operation. This investigation focused on the shore-to-ship movement of AAVs. At the time of this tragedy, shore-to-ship movement was not addressed within training or certification. As a result, there is no guarantee the training and certification during Amphibious Warfare (AMW) Basic Phase would have left the leadership better prepared to execute shore-to-ship movement. The Navy has identified and addressed this gap in training and certification and should continue to assess the risks based on the experience level of the leadership and crew.

5. Recommendations. I concur with the investigating officer's recommendations and add the following matters, which correspond directly to the numbered recommendations:

a. Recommendation 1. The Navy is currently implementing changes that reduce the risk of inherently dangerous activities and addressing issues highlighted in this report. Even as changes to Navy instruction on amphibious operations are reviewed, training already incorporates lessons learned about shore-to-ship movements in order to reduce risk. The Navy's comprehensive review of other Navy amphibious operations instructions will ensure amphibious operations safety measures are standardized across all instructions and codify key changes in doctrine.

b. Recommendation 3. I strongly concur the 5-week Senior Amphibious Warfare Officer's Course should be required training for all prospective COs. I further assess the course should be required for all XO's of Amphibious Class ships.

c. Recommendations 5, 6. As noted above, I strongly concur that AMW certification and training must include an equal focus on shore-to-ship movement. While certification and doctrine has traditionally focused on ensuring the fighting forces arrive to the fight, we also must focus on the safe return through whatever means, including the shore-to-ship movement.

d. Recommendation 10. Assessing leadership assignments is appropriate to determine whether a systemic change is needed. However, even options such as CO/XO fleet up can carry risk such as time in shipyards or limited integrated amphibious operations experience. The focus should be on mitigating identified risks at the time of an operation to an acceptable level of residual risk while continuing to meet the needs of the force.

6. My point of contact in this matter is CDR (b) (6) who may be reached at (b) (6).



S. T. KOEHLER

CUI

5830  
4 Jun 21

From: Rear Admiral Christopher Sweeney  
To: Commander, U.S. THIRD Fleet

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Ref: (a) JAGINST 5800.7G dtd 15 Jan 21 (JAGMAN)  
(b) VCNO ltr 5800 Ser N09/21U20000513 of 16 Apr 21  
(c) COMPACFLT ltr 5830 Ser N00/452 of 19 Apr 21  
(d) MARFORPAC ltr 5830/SJA of 25 Feb 21  
(e) CG I MEF ltr 5830/CG of 14 Jan 21  
(f) Col Fridriksson ltr 5830/ff of 8 Jan 20  
(g) Joint Publication 3-02, Amphibious Operations dtd 4 Jan 19  
(h) COMNAVSURFPACINST/COMNAVSURFLANTINST 3340.3E (Wet Well  
Manual)  
(i) NTTP 3-02M/MCTP 13-10E, Ship-to-Shore Movement, dtd Oct 18  
(j) MCTP 3-10C, Employment of Amphibious Assault Vehicles (AAVs), dtd 2 May  
16  
(k) BnO P30000.1J, Standard Operating Procedure for Assault Amphibian Operations  
(Common SOP for AA Operations) dtd 25 Oct 2019  
(l) COMTHIRDFLTINST/1 MEFO 3501.1, Amphibious Ready Group Fleet  
Response Training Plan and Marine Expeditionary Unit Pre-deployment Training  
Program, dtd 8 Aug 17

Encl: (1) COMTHIRDFLT ltr 5830 Ser N00/099 of 26 Apr 21  
(2) CSG11 ltr 5830 Ser N00/121 of 14 May 21  
(3) COMTHIRDFLT ltr 5830 Ser N00 of 17 May 21  
(4) Military Abbreviations and Terminology Guide  
(5) Table of Personnel Involved in Investigation  
(6) Visual depiction of movements of SOM on 30 Jul 20 1645 – 1856  
(7) Joint Publication 3-02, Amphibious Operations, Executive Summary, dtd 4 Jan 19  
(8) Joint Publication 3-02, Amphibious Operations, Chapter 3 (Command and  
Control), dtd 4 Jan 19  
(9) NTTP 3-02M/MCTP 13-10E, Chapter 4, Ship-to-Shore Movement, dtd Oct 18  
(10) Tactical Bulletin AMW-07-01, Landing Craft Procedures for San Antonio (LPD  
17) Class Ships, dtd Nov 17  
(11) NTTP 3-02M/MCTP 13-10E, Ship-to-Shore Movement, Appendix C, dtd Oct 18  
(12) U.S. Navy Regulations, Chapter 8, The Commanding Officer  
(13) Joint Publication 3-02, Amphibious Operations, Chapter 4 (Planning Phase), dtd 4  
Jan 19  
(14) BnO P30000.1J, Section 5-5, Standard Operating Procedure for Assault  
Amphibian Operations (Common SOP for AA Operations) dtd 2 May 16

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Subj: COMMAND INVESTIGATION INTO THE FACTS AND CIRCUMSTANCES SURROUNDING THE 30 JULY 2020 ASSAULT AMPHIBIOUS VEHICLE MISHAP DURING INTEGRATED OPERATIONS BETWEEN THE 15TH MARINE EXPEDITIONARY UNIT AND THE USS SOMERSET (LPD 25)

- (15) MCTP 3-10C, Employment of Amphibious Assault Vehicles (AAVs), Section 2-34, dtd 2 May 16
- (16) COMNAVSURFPACINST/COMNAVSURFLANTINST 3340.3E (Wet Well Ops) Chapter 9: Amphibious Assault Vehicle (AAV) Operations
- (17) Draft Advance Change Notice Two for Wet Well Operations Manual last accessed 4 June 2021
- (18) COMNAVSURFPAC/COMNAVSURFLANTINST 3502.7B, Surface Force Training and Readiness Manual, Chapter 4, dtd 19 Apr 21
- (19) COMTHIRDFLTINST/IMEFO 3502.1, Amphibious Ready Group Fleet Response Training Plan and Marine Expeditionary Unit Pre-deployment Training Program, dtd 8 Aug 17
- (20) COMNAVSURFPAC 151622Z Oct 18
- (21) COMNAVSURFPAC/COMNAVSURFLANTINST 3502.7B, Section 5-5, Surface Force Training and Readiness Manual, dtd 19 Apr 21
- (22) AMW-11 Certification Checklist
- (23) AMW-11 Certification Sustainment Checklist
- (24) Lesson Plan for Amphibious CIC Boat Control, Expeditionary Warfare Training Group, Atlantic
- (25) Signed statement of CAPT Bateshansky, USN, dtd 11 May 21
- (26) Article 31(b) Rights Advisement signed by CAPT Kurtz, USN, dtd 24 Aug 20
- (27) Summary of first interview of CAPT Kurtz, USN, dtd 24 Aug 20
- (28) Article 31(b) Rights Advisement signed by CAPT Kurtz, USN, dtd 11 May 21
- (29) Second signed statement with enclosures of CAPT Kurtz, USN, dtd 18 May 21
- (30) Second signed summary of interview of CDR (b) (6), USN, dtd 23 May 21
- (31) OPNAVINST 3130.6E, Section 4-3, dtd 3 May 10
- (32) MCTP 3-10C, Section 3-18, Employment of Amphibious Assault Vehicles (AAVs), dtd 2 May 16
- (33) BnO P30000.1J, Section 3-27, Standard Operating Procedure for Assault Amphibian Operations (Common SOP for AA Operations) dtd 25 Oct 2019
- (34) MCTP 3-10C, Section 2-6, Employment of Amphibious Assault Vehicles (AAVs), dtd 2 May 16
- (35) NAVMETOCINST 3144.1E, Chapter 8, dtd 3 Aug 10
- (36) Fleet Oceanographic and Acoustic Reference Manual, Table 7-3, dtd June 20
- (37) 15th MEU Mechanized Raid (OPERATION GATOR SMASH) Confirmation Brief, dtd 29 Jul 20
- (38) Signed statement of Capt (b) (6) USMC, dtd 11 Sep 20
- (39) Signed summary of interview of LCDR (b) (6) USN, dtd 24 May 21
- (40) MCTP 3-10C, Section 3-12, Employment of Amphibious Assault Vehicles (AAVs), dtd 2 May 16
- (41) Article 31(b) Rights Advisement signed by CDR (b) (6) USN, dtd 24 Aug 20
- (42) Summary of first interview of (b) (6) USN, dtd 24 Aug 20
- (43) Summary of Interview of LTJG (b) (6) USN, dtd 13 Aug 20

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- (44) Signed summary of interview of LTJG (b) (6) USN, dtd 18 May 21
- (45) COMPHIBRON THREE 292330Z Jul 20
- (46) USS SOMERSET 292345Z Jul 20
- (47) USS SOMERSET (LPD 25) Underway Watch Bill, AAV Operations, dtd 23 Jul 20
- (48) USS SOMERSET (LPD 25) Small Boat Operations and Amphib Operations Brief dtd 30 Jul 2020
- (49) Summary of Interview of LCDR (b) (6) USN, dtd 24 Aug 20
- (50) Article 31(b) Rights Advisement Signed by LCDR (b) (6) USN, dtd 13 May 21
- (51) Signed summary of interview of LCDR (b) (6) USN, dtd 15 May 21
- (52) Summary of Interview of LT (b) (6) USN, dtd 13 Aug 20
- (53) Signed summary of interview of LT (b) (6) USN, dtd 25 May 21
- (54) Signed summary of interview of LCDR (b) (6) USN, dtd 21 May 21
- (55) 15<sup>th</sup> MEU FECC SACEX Confirmation Brief
- (56) USS MAKIN ISLAND ARG AIR PLAN, dtd 30 Jul 20
- (57) Well Deck Control Officer Log Book from 0500-0553 on 30 Jul 20
- (58) Summary of first interview with CWO3 (b) (6) USMC, dtd 13 Aug 20
- (59) Summary second interview with CWO3 (b) (6) USMC, dtd 14 May 21
- (60) Mechanized Raid Checklist with Timeline
- (61) Fleet Numeric Analysis from 0500-2000 on 30 Jul 20 around USS SOMERSET and the west coast of San Clemente Islands
- (62) Combined Log of Electronic Message from the 15th MEU and MKIARG
- (63) Signed Statement of GySgt (b) (6) USMC, dtd 23 Sep 20
- (64) Article 31(b) Rights Advisement Signed by SSgt (b) (6) USMC, dtd 2 Sep 20
- (65) First Signed Statement of SSgt (b) (6) USMC, dtd 5 Aug 20
- (66) Second Signed Statement of SSgt (b) (6) USMC, dtd 25 Sep 20
- (67) Article 31(b) Rights Advisement Signed by Cpl (b) (6) USMC, dtd 2 Sep 20
- (68) First signed statement of Cpl (b) (6) USMC, dtd 23 Sep 20
- (69) Second signed statement of Cpl (b) (6) USMC, dtd 23 Sep 20
- (70) Summary of Interview of SSgt (b) (6) USMC, dtd 4 Aug 20
- (71) SSgt (b) (6) Surf Observation Report 30 Jul 20
- (72) Summary of first interview of SSgt (b) (6) USMC, dtd 3 Aug 20
- (73) Summary of second interview of SSgt (b) (6) USMC, dtd 17 May 21
- (74) Signed summary of interview of OS1 (b) (6) USN, dtd 18 May 21
- (75) Signed Statement of Capt (b) (6) USMC, dtd 18 Aug 20
- (76) SOMERSETINST 3340.1B, Enclosures 8-9, dtd 15 June 17
- (77) Summary of interview of 1st Lt (b) (6) USMC, dtd 11 Aug 20
- (78) Voluntary Statement of 1st Lt (b) (6) USMC, dtd 15 Aug 20
- (79) USS SOMERSET's GPS position 005Z-0217Z 31 Jul 20 (due to the use of ZULU time this enclosure indicates the mishap occurred on 31 Jul 20)
- (80) USS SOMERSET Deck Log Sheet, dtd 30 July 20



Subj: COMMAND INVESTIGATION INTO THE FACTS AND CIRCUMSTANCES SURROUNDING THE 30 JULY 2020 ASSAULT AMPHIBIOUS VEHICLE MISHAP DURING INTEGRATED OPERATIONS BETWEEN THE 15TH MARINE EXPEDITIONARY UNIT AND THE USS SOMERSET (LPD 25)

- (81) Signed Summary of Interview of 1st Lt (b) (6) USMC, dtd 13 Sep 20
- (82) Summary of Second Interview of 1st Lt (b) (6) USMC, dtd 4 Aug 20
- (83) Well Deck Control Officer Log Book, 0909-1843 on 30 Jul 20
- (84) Summary of Interview of Cpl (b) (6) USMC, dtd 5 Aug 20
- (85) Summary of Second Interview of Cpl (b) (6) USMC, dtd 19 Aug 20
- (86) Summary of Interview of Sgt (b) (6) USMC, dtd 5 Aug 20
- (87) Summary of Second Interview of Sgt (b) (6) USMC, dtd 19 Aug 20
- (88) Summary of Interview of LCDR (b) (6) USN, dtd 13 Aug 20
- (89) BnO P30000.1J, Section 3-10, Standard Operating Procedure for Assault Amphibian Operations (Common SOP for AA Operations) dtd 2 May 16
- (90) Signed Summary of Interview of Capt (b) (6) USMC, dtd 11 Sep 20
- (91) Summary of Interview of Cpl (b) (6) USMC, dtd 5 Aug 20
- (92) Summary of Second Interview of Cpl (b) (6) USMC, dtd 19 Aug 20
- (93) Summary of Interview of 2ndLt (b) (6) USMC, dtd 5 Aug 20
- (94) Summary of Second Interview of 2ndLt (b) (6) USMC, dtd 11 Aug 20
- (95) Signed Summary of Interview of MSgt (b) (6) USMC, dtd 11 Sep 20
- (96) Signed Statement of MAJ (b) (6) USMC, dtd 11 Sep 20
- (97) Mr. (b) (6) (Field Service Representative PMAAVS) Limited Technical Inspection reports on AAV 523519, dtd 19 Aug 20

### Preliminary Statement

1. Pursuant to enclosure (1) and in accordance with reference (a), a Command Investigation was conducted to investigate the facts and circumstances surrounding the fatal Amphibious Assault Vehicle (AAV) sinking that occurred during U.S. Navy and U.S. Marine Corps integrated training, Operation GATOR SMASH, on 30 July 2020. Operation GATOR SMASH involved a mechanized amphibious raid conducted by MAKIN ISLAND Amphibious Ready Group (MKIARG)/15<sup>th</sup> Marine Expeditionary Unit (MEU) from USS SOMERSET (LPD 25), hereinafter referred to as SOM, to San Clemente Island (SCI). The investigation was conducted pursuant to references (b) and (c) and serves to supplement references (d) – (f).

2. I extend my deepest and most sincere condolences to the families, friends, loved ones, shipmates and the Marine brothers and sisters of: Private First Class Evan A. Bath, Private First Class Bryan J. Baltierra, Lance Corporal Marco A. Barranco, Navy Hospital Corpsman 3rd Class (Fleet Marine Force) Christopher Gnem, Private First Class Jack-Ryan Ostrovsky, Lance Corporal Guillermo S. Perez, Corporal Wesley A. Rodd, Lance Corporal Chase D. Sweetwood, and Corporal Cesar A. Villanueva. Although the findings of this investigation will never alleviate the overwhelming grief of the families and loved ones of these fine Americans, it will identify gaps and make recommendations to improve training, readiness and the safety of our Marines and Sailors to ensure an accident like this does not happen again.

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3. Per reference (b) this investigation was specifically directed to address any factors involving U.S. Navy personnel which potentially contributed to the sinking, to include: (1) communications, decisions, and actions of U.S. Navy personnel involved in the planning, approval, and execution of waterborne AAV operations originating from the SOM, whether these personnel were embarked or not; (2) communications between U.S. Navy and U.S. Marine Corps personnel leading up to, during, and immediately after the mishap; and (3) whether a clear command and control (C2) relationship was established and executed consistent with the agreed upon concept of operations and/or established Navy doctrine. This investigation was also directed to include an assessment of the possible impact on the waterborne AAV operations by the following factors: (1) sea state at the beginning of AAV operations and at the time of the mishap; (2) location, movement, and other ongoing operations of SOM; and (3) number and type of safety boats involved, along with the approval process.
4. This investigation does not focus on the 15<sup>th</sup> MEU or MEU training. The focus is on the U.S. Navy's role and its interaction with the Marine Corps in the above six areas.
5. The 16-member investigation team included subject matter experts (SMEs) from both the U.S. Navy and the U.S. Marine Corps. The SMEs from the U.S. Navy consisted of personnel with expertise in AAV operations, amphibious safety, well deck operations, and naval oceanography. The SMEs from the Marine Corps consisted of individuals with expertise in MEU and waterborne operations, amphibious assault planning and doctrine, non-tactical (administrative) AAV launch procedures, Marine Corps aviation and ship-based flight operations, and communications in a maritime environment. In addition to enclosures (1) – (97) listed above, the investigation team reviewed all enclosures included in reference (f).
6. While the ship's deployment schedule precluded a visit to the SOM, members of the investigating team were able to tour USS PORTLAND (LPD 27), hereinafter referred to as PTL, a sister ship of SOM, and visit to 3d Amphibious Assault (AA) Battalion. PTL leadership and members of ship's company were interviewed regarding amphibious operations, including AAV operations. Additionally, an AAV similar to the one which sank on 30 July 2020 was made available for the Investigating Officer's review.
7. All written statements were produced from notes taken by a member of the investigation team during the interview. Each interviewee was then permitted to correct his/her statement before signing and returning.
8. An extension request was granted by enclosure (3).
9. Enclosures (4) – (7) are included to assist the reader. Enclosure (4) is a glossary of terms used throughout this investigation that may not be well known outside of the amphibious community. Enclosure (5) is a table of personnel involved in this investigation. Enclosure (6) is a visual depiction of the estimated movement of SOM and AAVs on 30 July 2020 from 1645 –

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1856 as recreated by the investigation team from the log books, ship's position data, and statements taken during the course of both this and the Marine Corps' investigations.

10. Enclosures (7) – (16), (18), and (31) – (36) are excerpts from relevant Navy and Marine Corps publications. As most are voluminous, the Investigating Officer chose to excerpt the relevant chapter(s) or page(s). The full publications are listed in references (g) – (l).

11. Findings of fact (FF) 1-378 in reference (f) as endorsed by Commanding General, U.S. Marine Corps Forces Pacific in reference (d), are adopted into this investigation. Additional FFs, including further refinement of the timeline of events leading up to the sinking, serve to provide responses to the inquiries delineated above and in reference (b). I concur with the Marine Corps report that the cause of the mishap was a combination of maintenance failures and human factors. Any relevant enclosures incorporated from reference (f) have been renumbered in this report.

### **Findings of Fact**

#### **A. Background**

*This section provides background into amphibious operations. It is not specific to Operation GATOR SMASH, but reviews C2 doctrine, identifies PMINT and places it in the context of the training continuum for Amphibious Ready Group (ARG)/MEUs, explains the relevant instructions about safety boats, explains how sea state is categorized, and provides Navy affirmative steps taken between the time of the sinking and the current investigation.*

##### 1. Command and Control

*This section provides information on doctrine and C2 responsibilities during amphibious operations. Doctrine is not binding, but rather guidance, particularly during wartime. C2 requirements can be derived from: (1) doctrine (guidance); (2) Confirmation Briefs (coordination); and (3) intentions messages (detailed guidance and direction).*

##### a. Role of the CATF and CLF within doctrine

1. Commander, Amphibious Task Force (CATF) is the Navy officer designated in the initiating directive as the commander of the amphibious task force (ATF). Commander, Landing Force (CLF) is the officer designated in the initiating directive as the commander of the landing force (LF) for an amphibious operation. [Encl. (7)]

2. CATF, in close coordination with CLF, prepares the overall ship-to-shore movement, and will coordinate with the CLF to adjust for changing situations. The CATF is responsible for debarkation and ship-to-shore movement until termination of the amphibious operation. [Encl. (8)]

##### b. Shifting authorities between the CATF and CLF within doctrine

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3. C2 shifts between the CATF and the CLF, dependent on the type of amphibious operations. In the case of an amphibious raid, doctrine calls for the CATF to have control during the movement from ship-to-shore as the supported commander. CLF becomes the supported commander upon the raid force landing on the beach. CATF assumes the supported commander role again upon movement from the shore to the ship. [Encl. (8)]

c. Delegation of certain safety measures within doctrine

4. According to doctrine, the CATF and the CLF may delegate some of their responsibilities. The CATF may delegate some of its responsibilities by designating a control ship(s) and control officer(s) as part of the Navy control group. The organization of the Navy control group is based on the arrangement and number of landing beaches used by the Assault Force (AF) and is specifically designed to support the LF's organization for landing. The Navy control group keeps the CATF, CLF, and other designated commanders informed of the surface movement from ship-to-shore, including the actual landing of the waves and the visible progress of operations ashore. [Encl. (8)]

5. The primary leaders of the Navy control group include the: (1) Central Control Officer (CCO); and (2) Primary Control Officer (PCO). [Encl. (8)]

6. The CCO, referred to by call sign as (b) (5), is a naval officer normally located aboard the CATF's flagship to coordinate all surface ship-to-shore movement. One of the roles of the CCO is to plan and supervise the surface ship-to-shore movement. [Encl. (8)]

7. The PCO is embarked on a primary control ship (PCS) and assigned to control the movement of the landing craft and amphibious vehicles. For ARG/MEU operations, the PCO is the Commanding Officer (CO) of the PCS. [Encl. (8)]

8. Per doctrine, the responsibilities of the PCO include: (1) provide detailed plans, promulgated through a primary ship intentions message, to conduct the ship-to-shore movement for amphibious operations across a specified beach; (2) maintain the current locations and status of ships, landing craft, and boats assigned to conduct a landing on a colored beach; (3) maintain the status of debarkation or embarkation; and (4) monitor surf and weather conditions, and recommend the termination of boat operations should conditions warrant. [Encl. (8), (9)]

9. The PCS is an amphibious ship designated to provide support for the PCO and a CIC control team to track and control landing craft and AAVs for a landing beach. PCS responsibilities include (1) maintaining a plot of ships, AAVs, and landing craft within the PCO control area, (2) coordinating the movements of on-call waves and nonscheduled units, (3) coordinating landing craft, amphibious vehicle, and boat traffic movements during general offload or LF backload. [Encl. (9)]

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10. Per Navy doctrine, the boat control team plots, tracks, and controls the movements of scheduled waves from the PCS's CIC. The team members consist of a Supervisor, Wave Controller, Grid plotter, Radio net operators, Radar operator, Visual bearing taker, and Signalman for visual communications. [Encl. (9)]

11. Per the Navy Tactical Bulletin for LPDs, a boat control team in CIC includes a boat control evaluator. The evaluator's responsibilities include directing landing craft operations under control of the PCO, maintaining external communications on external circuits in accordance with the PCS intentions, and maintaining internal communications with the tactical action officer (TAO), combat information center watch officer (CICWO), and debarkation control officer (DCO). [Encl. (10)]

12. Per Navy doctrine, positive control is that method of controlling landing craft during which the PCS or LCAC control ship control team provides near-constant direction to the craft commander (e.g., craft master, vehicle driver, or wave commander) based upon information obtained by monitoring the craft's position versus the intended track. Course and speed changes are made at the direction of the control team, except as determined by the craft commander for emergency conditions. The control team continuously updates the craft's position via an external control source, which may be electronic (e.g., radar), voice communications, data link, or a combination of sources. [Encl. (9)]

13. Positive control is the only method of control for AAV operations within ten nautical miles of land. No other method of control for AAVs is given in either Navy or Marine Corps doctrine. [Encl. (11)]

Figure C-1 provides the preferred control methods for landing craft and amphibious vehicles in different situations.

Preferred Methods of Control			
Craft	Independent Operations	OTH Assault Operations	Operations Within 10 nm of Land
LCAC	Independent	Advisory	Advisory
LCU	Independent	Advisory	Advisory
AAV	NA	NA	Positive

Figure C-1. Preferred Methods of Control for Landing Craft

14. The responsibility of the PCS is absolute, except when, and to the extent to which, he or she has been relieved therefrom by competent authority, or as provided otherwise. [Encl. (12)]

d. Go/No-go

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15. The criteria for go/no-go and abort are a set of standards or conditions in the operational environment that the commanders use to decide whether to proceed or not during the action phases of amphibious operations. [Encl. (13)]

16. Per doctrine, the authority to determine go/no-go and abort criteria resides with both the CATF and the CLF. [Encl. (13)]

17. The AAV vehicle commander has the final decision on whether the safety of the AAV, crew, or embarked troops is in question. [Encl. (14)]

e. Permissions process prior to launch from beach

18. Per Marine Corps doctrine, a surface observation (SUROB) report must be completed prior to entering the water. The SUROB is supervised by the designated Assault Amphibian (AA) leader. Once complete, the report is sent to the controlling ship along with the following confirmations: (1) the pre-water operational checks have been completed; (2) the passengers have been briefed, instructed, and embarked; (3) the manifest list has been submitted to the unit leader; and (4) permission has been received to launch. Authority to grant permission to launch is not further clarified. [Encl. (15)]

19. At the time of the sinking the Navy did not have a requirement for ships to provide permission to AAVs prior to launch from the beach. [Encl. (16), (17)]

f. Intentions, messages, and guidance

20. The relationship and authorities for the CATF, CLF, and commanders of other forces assigned to the AF are established in the initiating directive. [Encl. (13)]

21. Following the planning process, the CATF, supported by the CLF, develops an Operational Tasking Amphibious message the OPTASK AMPHIB. [Encl. (13)]

22. The OPTASK specifies, amongst other items, the ATF commander's intent, duties, and responsibilities; the operational area; all geographic areas; and timelines for the assault. [Encl. (13)]

23. If the OPTASK designates a PCO, he/she is assigned to provide detailed plans regarding the conduct of the ship-to-shore movement in a PCS intentions message. [Encl. (8)]

## 2. ARG/MEU Training

*This section details the training methodology for an ARG and MEU. It also provides a timeline for the MKIARG, of which SOM was a part, as it moved through the beginning phases of Operation GATOR SMASH through the sinking on 30 July 2020.*

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24. The ARG training sequence is: (1) Maintenance phase; (2) Shakedown Phase; (3) Basic Phase; (4) Advanced Phase; (5) ARG/MEU Integrated Phase. [Encl. (18)]
25. The ARG/MEU integrated training sequence is as follows: (1) PHIBRON/MEU Integration Exercise (PMINT); (2) ARG/MEUEX; (3) Certification event: Composite Training Unit Exercise (COMPTUEX); and (4) Pre-Overseas Movement (POM). [Encl. (19)]
26. SOM certified for Amphibious Warfare (AMW) mission area on 15 October 2018, during the ship's Basic Phase. [Encl. (20)]
27. The SOM CO, Executive Officer (XO), Plans and Tactics Officer (PTO), and TAO aboard on 30 JUL 2020 were not present during the AMW basic phase certification. [Encl. (27), (29), (30), (39), (49), (51)]
28. Certification requirements for AMW include an evaluated ship-to-shore movement of AAVs as well as ship-to-shore movement for LCACs and LCUs. [Encl. (18), (21)]
29. Certification does not include an evaluation of shore-to-ship movements for any craft, including AAVs. [Encl. (18), (21), (22)]
30. Recurring proficiency requirements for AMW qualification does not include an evaluation of shore-to-ship movements for any craft, including AAVs. [Encl (23)]
31. The training curriculum to control surface ship-to-shore movement for AAVs, LCUs, and LCACs utilizing positive control procedures, which one might refer to in order to prepare for certification, does not include a terminal or enabling objective for the control of movement from shore-to-ship. [Encl. (24)]
32. MKIARG was conducting PHIBRON/MEU Integrating Training (PMINT), the first part of the integrated phase (Phase 3), on 30 July 2020. [Encl. (25), (26), (27), (28), (29), (30)]
33. PMINT is normally a (b) (5) underway event. It is the first time the entire ARG/MEU team operates together in an underway environment. [Encl. (19)]
34. PHIBRON and MEU Commanders are given wide latitude to develop the PMINT SOE and supporting activities. In a baseline schedule the ARG/MEU should conduct, amongst other activities, Supporting Arms Coordination Exercise (SACEX) and landing craft training. No guidance is provided as to timing of these events. [Encl. (19)]
35. During PMINT, coordinated amphibious operations as well as warfare commander roles are exercised. The phase is designed to correct issues discovered in operating instructions and determine the best tactical employment of assets assigned. [Encl. (19)]

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36. During PMINT, naval support elements conduct well deck procedures, ship-to-shore movement, surf zone procedures, beach landings, and craft landing zone procedures. The MEU executes a battle rhythm between MEU and ARG and crisis action rehearsals in a crawl-walk-run pace of MEU missions. [Encl. (19)]

### 3. Safety Boats

*This section provides the relevant U.S. Navy and U.S. Marine Corps safety boat instructions in effect on 30 July 2020.*

37. Safety boats are mentioned but not defined within amphibious doctrine. The only naval instruction defining “safety boat” at the time of the sinking was OPNAVINST 3130.6E, Naval Search and Rescue Standardization Program. This instruction states, “a safety boat is defined as a motor powered boat of sufficient size to safely transport boat crew, required equipment and all rescue swimmers involved in training. The minimum required crew and equipment are one coxswain, one safety assistant, one rescue swimmer attired for immediate water entry, one complete rescue litter assembly with flotation, trail line, V-strap, gloves, lifting slings, chemical lights with straps, one operable two-way radio and one level ‘A’ medical kit.” [Encl. (31)]

38. At the time of sinking, reference (h), the Navy’s Wet Well Manual, required safety boats during all AAV waterborne evolutions. One safety boat is required for five or less vehicles; two safety boats for six or more vehicles. If the ship cannot provide a sufficient number of safety boats, an unloaded AAV may be designated as a safety boat. [Encl. (16)]

39. The Wet Well Manual and other Navy instructions do not define the approval authority for the type of safety boat to be used during an AAV waterborne evolution. [Encl. (16)]

40. Per reference (j), the authoritative Marine Corps instruction on AAV operations, safety boats may be employed to render assistance and pick up personnel from disabled or sinking AAVs. Safety boats are normally Navy craft from the launching ship, but if none are available an empty AAV in each wave should be designated as a safety boat. [Encl. (32)]

41. Per reference (k), the Marine Corps’ Standard Operating Procedures for Assault Amphibian Operations, do not require safety boats for amphibious operations. AA units will designate a bump/recovery plan to render aid and pick up personnel from disabled or sinking AAVs. Reference (k) also requires that an AAV in each wave should be designated as a safety boat. [Encl. (33)]

42. Per Marine Corps doctrine only, the CATF employs boat groups, with a Boat Group Commander, to control AAVs and landing craft in scheduled waves. Each boat group has a Boat Group Commander to help guide the movement of the group to and from the beach. The Boat



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Group Commander is embarked aboard a small naval craft (e.g. a RHIB) that may be tasked to act as a safety boat in the event of emergencies. [Encl. (32)]

43. Although current Marine Corps doctrine envisions small naval craft (e.g. RHIBs) to be used to guide movement of AAVs to and from the beach, current Navy doctrine does not provide guidance on their use beyond as a safety boat in case of emergency. [Encl. (9), (11), (16)]

44. Current Navy ship certification for control of AAVs from ship-to-shore includes whether boats are used to mark the boat lane upon launch from the ship. [Encl. (22)]

#### 4. Sea State

*This section provides relevant definitions of sea state and its significance to AAV or amphibious operations.*

45. The Marine Corps evaluates sea state utilizing a scale that is mathematically correlated to the Pierson-Mokowitz spectrum. The scale determines sea state by utilizing wind speed, wave height, and wave conditions observed (e.g. scattered whitecaps, spray, breaking crests). [Encl. (34)]

46. AAVs have a demonstrated ability to easily negotiate sea states one through three, but will experience difficulty maintaining speed and maneuverability in sea state four. AAVs can survive operations in sea state five, but at reduced effectiveness. [Encl. (34)]

47. The Navy Manual for Ship's Surface Weather Observation utilizes the Beaufort Wind Force Scale and for "Sea State" does not consider wave height, but uses wind speed and qualitative observations of the seas (e.g. white foam, length edges of crests, breaking crests, spray). [Encl. (35)]

48. The Fleet Oceanographic and Acoustic Reference Manual correlates Beaufort Wind Force Scale with wave heights into a numbered sea state with descriptions of "effects observed at sea" (e.g. appearance of crests, whitecaps, spray). [Encl. (36)]

49. Navy Wet Well Manual no-go criteria for ship operations with AAVs is a sea state of four or higher and does not correlate sea state to wave height as it does for LCAC and LCUs. [Encl. (16)]

5. Modifications to U.S. Navy Instructions since 30 July 2020  
*Since 30 July 2020 the Navy has begun the process of making changes to the Wet Well Manual. The relevant proposed modifications are discussed below.*

50. COMNAVSURFOR distributed Draft Advance Change Notice Two for Wet Well Operations. [Encl. (17)]

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51. Planned changes to the Wet Well Manual include the following:

a. Small boats shall be provided by the ship during all waterborne AAV/Amphibious Combat Vehicle (ACV) evolutions. An AAV/ACV shall not be used as a safety boat. [Encl. (17)]

b. At a minimum, one unloaded AAV/ACV shall be provided to each wave as a bump/recovery vehicle to receive personnel in the event of an emergency. [Encl. (17)]

c. All small boat personnel and ship lookouts shall be alert for the AAV/ACV distress signals when AAVs/ACVs are waterborne. One lookout shall be stationed in debark control to keep a visual on the AAVs/ACVs. [Encl. (17)]

d. Radio communications concerning disabled or sinking waterborne AAVs/ACVs shall take precedence, and must be reported to the PCS CO immediately. [Encl. (17)]

e. Before launching from ship or shore, the wave commander, PCS, and small boats must have positive communications. The PCS's bridge must monitor all communications for situational awareness. The AAV/ACV must also receive a current sea state assessment from the PCS, and receive permission to launch before entering the water. [Encl. (17)]

f. Permission to launch AAVs/ACVs from the ship or from the shore may only be granted by the PCS CO in coordination with the PCO. [Encl. (17)]

g. Prior to conducting any AAV/ACV training, a safety and operations brief must be held for all participating ship's company, the AAV/ACV OIC, and the embarked personnel OIC. If launching AAVs/ACVs, the brief must cover re-embarkation, if applicable. [Encl. (17)]

**B. Operational Planning for Events on 30 July**

*These sections discuss the planned and executed SOM events on 30 July: (1) AAV raid, Operation GATOR SMASH; and (2) Air operations, SACEX. A third evolution, an underway replenishment, was planned but cancelled. All times indicated are local time zone.*

1. Operation GATOR SMASH

a. Confirmation Brief

52. The MKIARG/15<sup>th</sup> MEU prepared for the mechanized amphibious raid, Operation GATOR SMASH, through a Confirmation Brief that occurred on 29 July 2020 from 1930 to 2100. [Encl. (37), (38)]

53. Amongst those in attendance at the brief, were Commodore, Amphibious Squadron THREE (CPR-3), the 15<sup>th</sup> MEU CO, SOM CO, SOM XO, and SOM PTO. [Encl. (25), (27) (29), (30), (39)]

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54. For Operation GATOR SMASH, Commodore, CPR-3 served as the CATF and CO, 15<sup>th</sup> MEU served as the CLF. CO, Company B, Battalion Landing Team 1/4 served as the Raid Force Commander (RFC). [Encl. (25), (37)]

55. The Confirmation Brief addressed: (1) C2 structure; (2) estimated timeline of the raid; (3) phases of the operation and authorities associated with those phases; (4) proposed operating areas (5) go/no-go criteria; and (6) Commander's Critical Information Requirements (CCIRs). [Encl. (37)]

56. The Confirmation Brief depicted scenario based command and control relationships from the Geographic Component Commander to the Commander, Task Element. [Encl. (37)]

57. Per the brief, Red Beach was designated as the AAV shore landing site on SCI. SOM was the only ship that would be conducting ship-to-shore movements to that beach. [Encl. (37)]

58. The communications concept of support lists SOM in communication with both the raid force and the AAV Marines through Boat Alpha (primary) and Boat Bravo (alternate) radio net. [Encl. (37)]

59. The communication concept of support also lists MKI in communication with the Marines, both the raid force and the AAVs, through multiple lines of communication. [Encl. (37)]

60. The concept of operations divided the operation into five phases: (1) shaping; (2) insertion; (3) actions on objective; (4) extraction; and (5) reconstitution. [Encl. (37)]

61. Phase II, insertion, was defined as beginning with raid force feet wet and ending with raid force feet dry/consolidated on the Beach Landing Site (BLS). [Encl. (37)]

62. Per the brief, authority to abort or delay in Phase II resided with the MEU CO. [Encl. (37)]

63. Phase II Ship-to-Shore Movement Plan tasked SOM to provide one (1) safety boat and the Marines to provide one (1) unloaded AAV as a safety boat. [Encl. (37)]

64. Phase III, actions on objective, began with seizure of the BLS and ended with the simulated destruction of a training camp and exploitation completion. [Encl. (37)]

65. Per the brief, authority to abort or delay in Phase III resided with the RFC. [Encl. (37)]

66. Phase IV, extraction, was defined in two different ways: (1) beginning with the completion of Tactical Site Exploitation (TSE) and ending with AAV feet dry aboard SOM; and (2) beginning with AAVs feet wet and ending with AAVs feet dry aboard SOM. [Encl. (37)]



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74. The absence of a Navy safety boat was not listed as a no-go criteria. [Encl. (37)]

75. During the brief, the CATF, CLF, and SOM CO agreed that if safety boats from the SOM would not launch on the morning of 30 July 2020, then two AAVs would be designated as safety boats. [Encl (29), (30)]

76. According to the Officer of the Deck (OOD), SOM would use ship-provided safety boats in approximately half of its ship-to-shore movements during SOM's Basic Phase. Otherwise, AAVs would be used to satisfy the safety boat requirement during AAV operations. [Encl (43), (44)]

77. The brief included go criteria for SOM to be within 5 miles (8,800 yards) of shore. [Encl. (37)]

78. The Confirmation Brief Operational Risk Management matrix (ORM) did not identify hazards associated with AAV launch, recovery, or waterborne operations. [Encl. (37)]

79. Relevant CCIRs included: (1) failure, or projected failure, to meet directed timelines or mission objects; and (2) capability readiness that will prevent on-going or planned operations. [Encl. (37)]

b. Additional taskings and background

80. On 29 July at 1630, prior to the Confirmation Brief, CATF released OPTASK AMPHIB message designating the SOM for the role of PCS during Operation GATOR SMASH. [Encl. (45)]

81. The message directed SOM, as the PCS, to execute positive control over the AAVs during waterborne operations. [Encl. (45)]

82. Under a section titled Policy and Procedures for Control of Landing Craft (LC) the message directed the following:

- a. LC take direction from Debark Control/Well Deck Control WRT launch/recovery
- b. LC reports OPS normal to Well Deck control and shift of control from debark to PCS
- c. PCS conduct appropriate control of LC from ship-to-shore and direct LC to CCA/LOD/Beach
- d. PCS BPT accept control of LC within sight upon completion of LC onload
- e. LCACs will operate under advisory control
- f. AAVs will operate under positive control

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83. SOM released the PCS Intentions message at 1645, after receiving the OPTASK AMPHIB message. [Encl. (46)]

84. The SOM PCS Intentions Message reiterated the above policy and procedures for control of landing craft, specifically stating the AAVs will operate under positive control of the PCS. [Encl. (46)]

85. The OPTASK AMPHIB and PCS Intentions message promulgated SYRUP as the location for SOM to launch AAVs, but did not direct a location for SOM to recover AAVs. [Encl. (45), (46)]

86. The SOM CO, SOM XO, and SOM PTO reported the SOM conducted a separate amphibious operations brief for Operation GATOR SMASH at approximately 1500 on 29 July 2020. [Encl. (27), (29), (30), (39), (42), (48)]

87. The brief contained information on the schedule of events, safety boat detail, and ballast operations. [Encl. (27), (29), (30), (39), (42), (48)]

88. The brief omitted the scheme of maneuver and ORM specific to AAV operations. [Encl. (27), (29), (30), (39), (42), (48)]

89. Other Navy personnel who were interviewed could not recall if an amphibious operations brief was provided, but stated it is standard practice to do so. [Encl. (43), (44), (49), (50), (51), (52), (53), (54)]

## 2. SACEX

90. Following the completion of Operation GATOR SMASH on 30 July, SOM planned to conduct air operations in support of a SACEX. [Encl. (55)]

91. The CLF was the supported commander for SACEX and ran the exercise through the Supporting Arms Coordination Center (SACC) aboard MKI. [Encl. (55)]

92. CATF supported CLF by providing Naval Surface Fire Support during SACEX. [Encl. (55)]

93. Air operations aboard SOM were originally scheduled from 1300-2245. [Encl. (56)]

94. MKI and USS SAN DIEGO (LPD 22), hereinafter referred to as SDG, were also scheduled to participate in SACEX. [Encl. (55)]

95. The ARG/MEU Air Plan for SACEX did not include any flight operations at the time AAVs were originally planned for launch or recovery during Operation GATOR SMASH. [Encl. (56)]

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**C. Timeline of Events on 30 July 2020**

**Launch from SOM**

96. SOM set Condition IIIA, SOM's watch bill for AAV operations, at 0500 and remained at Condition IIIA throughout the remainder of the day. [Encl. (57)]

97. On the morning of 30 July 2020 SOM had a total of four Navy small boats aboard: one 7 meter RHIB at their CALEY Davit, one 11 meter RHIB and two MRF RHIBs in the ship's boat valley deployable by the Knuckle Boom Crane. [Encl. (27), (29)]

98. On the morning of the raid, SOM discovered the seven meter RHIB that was scheduled to support AAV operations was inoperable. [Encl. (27), (29)]

99. At approximately 0720 SOM's CO radioed the SOM Combat Cargo Officer and asked her to coordinate with the AAV Platoon Commander regarding how the Marines wanted to proceed in light of the inoperable safety boat. [Encl. (27), (29), (58), (59)]

100. The SOM CO reported that he told the Combat Cargo Officer to pass on to the RFC that the ship could provide a different safety boat. It would take approximately one hour for the SOM to get an alternate safety boat into the water. [Encl. (29), (58), (59)]

101. The Combat Cargo Officer spoke to the AAV Platoon Commander who reported that the AAV platoon was able to use a second AAV as a safety boat.[Encl. (27), (29), (58), (59)]

102. Upon learning that two AAVs would serve as safety boats, the CO informed the CATF of the plan to use the two AAVs in the place of a Navy safety boat in accordance with the CCIRs delineated in the Confirmation Brief. [Encl. (25)]

103. SOM Combat Cargo Officer could not recall any AAV serial assignment manifest changes allowing an additional AAV to be used as a safety boat. She also reported that embarked troops would not have been able to debark an AAV after it was staged in the well deck for launch due to safety concerns. [Encl. (58), (59)]

104. At 0750, following the decision about the safety boats, 13 AAVs launched from SOM. [Encl. (60)]

105. Through analysis of meteorological data collected for this investigation, it was determined that at the time of launch from SOM seas in the vicinity of SOM and along the route transited by the AAVs were from the Northwest at three to four feet reducing to two to three feet closer to Red Beach. Winds were from the northwest at 15 knots or less. [Encl (61)]

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106. Neither wind nor sea height calculations met the no-go criteria for the amphibious raid at the time of launch from SOM. [Encl. (32), (37)]

**AAVs land on SCI and shift to CLF control for the mechanized raid**

107. Following departure of the AAVs from the SOM, the SOM CO ordered the crew to take the knuckle boom crane, which was in boat valley, and stage it on the 11 meter RHIB. The SOM CO reported that he wanted to stage the 11 meter RHIB as it can take some time to get the crane in position and he wanted to have the safety boat ready to go in case they needed it at a later time. [Encl. (27), (29)]

108. The mechanized raid from SOM to SCI landed on West Cove, SCI at 0838. The ship-to-shore movement took 48 minutes. [Encl. (60)]

109. At 0908 the raid force commenced actions on the objective. [Encl. (60)]

110. At approximately 0948, AAV 12 “blew a hub” and needed repair. [Encl. (38)]

111. In accordance with CCIRs in the Confirmation Brief, SOM CO informed CATF of the mechanical issue with the AAV on the beach. [Encl. (25)]

112. Once the CATF was aware of the possible delays, he coordinated with SOM CO to cancel SOM’s underway replenishment (RAS) that was scheduled for that day in an attempt to decompress SOM’s schedule and support AAV repairs. [Encl. (25)]

113. At 1223 SOM Surface Warfare Commander (SUWC) watchstander in CIC reported to (b) (6) that SOM would proceed to operation area SYRUP, a position closer to the beach. [Encl. (62)]

114. At 1223 SOM SUWC relayed to (b) (5) a sea state of 1-2. [Encl. (62)]

115. At approximately 1500, the AAV Platoon recommended to Bravo Company Commander that, due to delays in fixing AAV 12, an AAV section of four AAVs should remain on SCI. These AAVs would independently return to SOM once AAV 12 was repaired. [Encl. (38), (63)]

116. Bravo Company Commander did not relay the decision to maintain four AAVs on SCI to SOM. [Encl. (29)]

117. While the AAVs were staged and waiting return, AAV 5 crewmembers discovered a mechanical issue with the AAV but later believed that it had been repaired and they continued to prepare to splash from SCI. In reference (f), AAV 5 is referred to by serial number 523519 or track 5. [Encl. (64), (65), (66), (67), (68), (69)]



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118. At 1530, a Surf Observation Report (SUROB) at Red Beach was conducted by AAV Platoon, 3rd Section leader, with a corresponding report of mean surf index of 2.1. However, this was not transmitted to the PCS. [Encl. (70), (71)]

**Preparations for return to SOM**

119. Boat Alpha is SOM's primary radio circuit for communications with AAVs and is typically used by the ship when the AAVs are getting ready to launch from the beach and during their transit both from and to the ship. Boat Bravo is the secondary radio communication circuit for communication between the ship and AAVs. [Encl. (48)]

120. The AAV Wave Commander is the designated communication station with SOM CIC on Boat Alpha. [Encl. (72), (73)]

121. At 1600, the AAV Platoon, 1<sup>st</sup> Section Leader, serving as the AAV Platoon Wave Commander, reported that he established communications with SOM and began coordination for extraction and re-embarkation on SOM. [Encl. (72), (73)]

122. SOM CIC Watch Supervisor and the AAV Platoon Wave Commander reported that they were predominantly communicating with each other on Boat Alpha, but at times had to switch to Boat Bravo. [Encl. (52), (53), (72), (73), (74)]

123. Headquarters and Service (H & S) Company Commander, the Watch Officer located within the Landing Force Operations Center (LFOC) on board SOM, was in communication with the AAVs on Boat Alpha during the AAVs transit to SOM. The PCO believed when the AAVs were feet wet they were communicating on Boat Alpha with MKI and were not communicating directly with the SOM CIC. The PCO was unaware if the AAVs were communicating with the SOM LFOC during their transit. [Encl. (29), (75), (82)]

124. H & S Company Commander described his radio communications aboard SOM on Boat Alpha with the AAVs as "crystal clear" for "basically the whole time." [Encl. (75)]

125. Prior to splash, SOM SUWC and CIC Watch Supervisor received estimated splash times from the AAV Platoon Wave Commander. [Encl (52), (53), (72), (73), (74)]

126. At 1609 SOM SUWC reported to (b) (5) that AAVs were estimated to enter the water (go "feet wet") in 10 minutes. [Encl. (62)]

127. At 1610 (b) (6) acknowledged AAVs feet wet in 10 minutes. [Encl. (62)]

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128. At 1639 SOM SUWC reported to (b) (5) that SOM was currently de-conflicting AAV splash time with flight ops and it had no time estimates. [Encl. (62)]

129. At 1641 SOM SUWC reported to (b) (5) an updated estimated time for AAVs to go feet wet in two minutes. (b) (5) acknowledged this report. [Encl. (62)]

130. According to SOM CIC Watch Supervisor and AAV Wave Commander, the SOM CIC Watch Supervisor, through Boat Alpha radio transmission, provided permission for the AAVs to splash from shore. [Encl. (72), (73), (74)].

### **Splash from SCI**

131. At 1651, SOM reported to (b) (5) a total of nine AAVs splashed from SCI to SOM. SOM was within 5 miles of the shoreline at time of splash. [Encl. (6), (79), (62)]

132. Although SOM was aware that one AAV had mechanical issues while on SCI, the first time the ship was aware that not all 13 AAVs would be splashing back from SCI was after the nine AAVs went feet wet. [Encl. (27), (29), (49), (51), (52), (53), (62)]

133. SOM TAO and SOM SUWC, both located within CIC, were surprised when the AAVs went feet wet and were unaware of prior permission that was communicated by the SOM Watch Supervisor to the AAV Wave Commander over Boat Alpha. [Encl. (49), (51), (52), (53)]

134. SOM checklist for recovery of AAVs does not include a permission process for the AAVs to request and for the ship to grant permission for AAVs to go feet wet from the beach. [Encl. (76)]

135. No formal permissions process for AAVs to go feet wet from the beach existed either within SOM or general Navy instruction at the time. In accordance with Marine Corps instruction, the Marines generally provide the ship with updates prior to splash, including how many passengers are in the AAVs, the time they plan to go feet wet, and which AAVs are returning to the ship. [Encl. (15), (52), (53)]

136. Prior to splash, the only information provided by the Marines on 30 July 2020 was estimated times to splash. The Marines did not indicate to the SOM the completion of pre-check surveys, manifests, or the number of AAVs that would splash from Red Beach. [Encl. (52), (53)]

137. SOM CO believed that as the PCO he did not have the authority to abort or delay splash back to the SOM from SCI. His attendance at the confirmation brief caused him to believe the authority to delay or abort splash and apply go/no-go criteria from SCI was the responsibility of the RFC. [Encl. (29)]

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138. SOM OOD and SOM CO were not aware of the estimated splash times provided to CIC and were unaware of prior permission that was communicated by the SOM Watch Supervisor to the AAV Wave Commander over Boat Alpha. Both were surprised when the AAVs splashed back to the ship and were alerted to their return by the OOD visually seeing the AAVs in the water. [Encl. (27), (29), (43), (44)]

139. SOM CO reported that the ship did not subsequently launch safety boats for AAV recovery because the AAV Platoon did not request them. He believed that the AAV Platoon would provide the same two empty AAVs he believed launched as safety boats during Phase II. [Encl. (27), (29)]

140. SOM CO reported that once the AAVs splashed back, he determined it was faster to drive to the AAVs instead of trying to launch a safety boat. [Encl. (29)]

141. The AAV Platoon Commander did not designate a safety boat for the extraction phase because he believed SOM would provide a safety boat per the original Confirmation Brief. [Encl. (77), (78)]

142. SOM continued heading towards the boat lane as the AAVs splashed from SCI. [Encl. (6), (43), (44), (79)]

143. When SOM first started heading back toward the beach the goal was to recover the AAVs at the 4,000 yard mark. [Encl. (52)]

144. Due to flight operations at the time of splash, the designated AMW Evaluator, instead of supervising the boat control team, was serving as the Sea Combat Air Controller (SCAC). [Encl. (54), (74)]

145. The SCAC was in CIC. [Encl. (54), (74)]

146. Through analysis of meteorological data collected for this investigation, it was determined that at the time of splash from SCI, seas in the vicinity of SOM and along the route transited by the AAVs were from the Northwest at 3 to 4 feet reducing to 2 to 3 feet closer to Red Beach. Winds were from the northwest at 15 knots or less. The conditions were unchanged from the morning launch and transit of the AAVs. [Encl. (61)]

147. Neither wind nor sea-height calculations met the no-go criteria at the time of splash from SCI. [Encl. (32), (37)]

148. After the AAVs went feet wet from SCI, SOM OOD received notification from SOM Tower that a helicopter needed to land on SOM. [Encl. (43), (44)]

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149. SOM OOD radioed SOM CO that AAVs were in the water and recommended that their recovery be prioritized over flight operations. SOM CO agreed with her recommendation. [Encl. (44)]

150. At 1709, SOM OOD realized the AAVs were not traveling inside the designated boat lane and SOM needed to land a helicopter. The OOD turned the ship in order to both set up for recovering the AAVs and landing the helicopter. [Encl. (43), (44)]

**AAVs report AAV 3 taking on water**

151. At approximately 1725, AAV 3 radioed that a malfunction was preventing the vehicle from maneuvering, that it was taking on water, and rigging for tow. [Encl. (72), (73), (81), (82)]

152. At approximately 1730, the AAV Platoon Wave Commander in AAV 1 determined SCI was the nearest safe harbor. AAV 1 began rigging with AAV 3 for tow. [Encl. (72), (73)]

153. When SOM TAO received the report an AAV was taking on water, he informed the OOD. [Encl. (49), (51)]

154. The OOD radioed the CO about AAV 3 and informed him that an AAV had two inches of water inside and was being rigged for tow back to SCI by AAV 1. [Encl. (29), (43), (44)]

155. The AAV Platoon Wave Commander in AAV 1 was the designated communication station with SOM CIC on Boat Alpha. At the time he determined AAV 3 needed to be towed, there was no mention of issues with AAV 5. [Encl. (73)]

156. After the departure of AAVs 1 and 3 to SCI, seven AAVs remained in transit to SOM. AAV 5 was the last in the column. [Encl. (65), (70)]

157. The CATF was aware that one AAV was rigged for tow and returning to SCI. [Encl. (25)]

**Flight Operations**

158. At 1740, SOM began to increase speed from 3 knots to 5 knots so SOM could meet aircraft launch criteria. [Encl. (43), (44), (80)]

159. Due to the location of the aft lookout position and dangers posed to the lookout during active air operations, no aft lookout was posted on SOM during flight operations. An aft lookout would have been in a position to observe the AAVs as a redundancy with the lookouts and other watchstanders on the bridge. [Encl. (29)]

160. There were multiple Navy watchstanders who were looking off the ship for AAVs, including: the OOD, JOOD, watchstanders on the bridge wings, the Debark Control Officer, the

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Ship's Boatswain, the Combat Control Officer in Debark Control, and both the Air Boss and Mini Boss, who were located in the ship's tower. [Encl. (29), (39), (43), (44), (49), (51), (54), (58), (59)]

161. At 1748, SOM began to decrease speed to 3 knots for AAV recovery. [Encl. (43), (44), (80)]

**Stern gate in the water, SOM prepares to recover AAVs, and AAV 5 begins to take on water**

162. At 1749, SOM placed the stern gate in the water. [Encl. (80)]

163. Around this time, the AAV 5 Rear Crewman notified the AAV 5 Vehicle Commander that water was at the deck plates. The Vehicle Commander acknowledged the message and stated, "Thanks for letting me know." [Encl. (65), (66), (68), (69)]

164. At that time, the AAV 5 Rear Crewman did not think the Vehicle Commander was concerned about the amount of water in the vehicle because it "is something Trackers have seen before." [Encl. (68), 69)]

165. At 1753, SOM recovered AAV 10, followed by AAV 8 at 1756. [Encl. (81), (82), (83)]

166. SOM was within 5 miles of the shoreline when AAV recovery began. [Encl. (6), (79)]

167. The AAV 3rd Section Leader in AAV 10 spoke to the SOM Combat Cargo Officer upon recovery about placing safety boats in the water as he believed AAV 3 was in distress as it headed back to SCI. [Encl. (70)]

168. At 1759 AAV 7 was recovered on board SOM. [Encl. (83)]

169. While AAV 7 was in the process of being recovered and AAV 6 waited in the water outside the well deck, AAV 6's crew chief reported to Bravo Company XO, who was also on board AAV 6, that he could see a November flag. [Encl. (81), (82)]

170. The Bravo Company XO turned to look and did not observe any AAV displaying a November flag. [Encl. (81), (82)]

171. According to the AAV 5 Vehicle Commander, after AAVs 10, 8, and 7 were recovered on board the SOM, he was informed by the AAV 5 Rear Crewman that water was at ankle level. He then began to execute emergency distress signals by waving the November flag. [Encl. (65), (66), (68), (69)]

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172. The AAV 5 Vehicle Commander would wave the flag and then lower it to give instructions to individuals in the AAV. [Encl. (65), (66)]

173. After waving the November Flag, the AAV 5 Vehicle Commander was able to make a transmission over the AAV radio channel used for communications among the AAVs. [Encl. (65), (66)]

174. The AAV 13 Vehicle Commander first became aware that AAV 5 had an issue when he heard the AAV 5 Vehicle Commander state over the AAV radio net that his vehicle was taking on water. [Encl. (84), (85)]

175. After making the initial transmission, the AAV 5 Vehicle Commander could hear a click when he attempted to communicate by radio, but could not hear that he was broadcasting. [Encl. (65), (66)]

176. AAV 13 Vehicle Commander's impression upon hearing AAV 5's initial report that it was taking on water was that the AAV 5 Vehicle Commander was simply noting it was happening and providing the other AAVs awareness of the situation. [Encl. (84), (85)]

177. After hearing AAV 5 was taking on water, AAV 13 continued on towards the ship. [Encl. (84)]

178. AAV 13's Vehicle Commander then looked back and saw AAV 5's Vehicle Commander waving the November flag. [Encl. (85)]

179. After seeing the November flag, AAV 13 reported through the AAV radio net what was happening and turned AAV 13 around to assist AAV 5. [Encl. (84), (85)]

180. Around the same time, AAV 14 Vehicle Commander heard the AAV 5 Vehicle Commander repeatedly try to key out over the AAV radio net, but he could not hear what the AAV 5 Vehicle Commander was saying. [Encl. (86), (87)]

181. AAV 14 then saw the November flag on AAV 5 and turned to assist AAV 5. [Encl. (86), (87)]

182. After two or three AAVs had been recovered, the SOM PTO, located within CIC at the time, heard a garbled transmission over Boat Alpha state "...taking on water." [Encl. (88)]

183. Around this time, SOM TAO received a report from the H & S Company Commander located on SOM that an AAV was starting to take on water and that the water was somewhere between the ankles and the knees. [Encl. (49), (75)]

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184. SOM TAO was informed by the H & S Company Commander that once the water level gets to chest level the passengers need to evacuate the AAV. [Encl. (49)]

185. Per Marine Corps instruction, when water is at “boot ankle level” the Vehicle Commander should consider taking the following actions: Execute all emergency distress signals. Evacuate all embarked troops. Prepare to evacuate while trying to reach nearest safe haven. [Encl. (89)]

186. According to the H & S Company Commander, there was confusion on the ship as to which AAV was in distress. There were simultaneous discussions about which AAV was taking on water, how much water it had taken on, and which AAVs were trying to get back to SCI versus trying to return to the ship. [Encl. (75)]

187. At approximately 1800, the BLT S-3A in AAV 13 requested SOM deploy safety boats over Boat Alpha. [Encl. (39), (88), (90)]

188. At 1803, AAV 6 was recovered on board SOM. [Encl. (81), (82), (83)]

189. When Bravo Company XO exited AAV 6 he was only aware that AAV 3 was in distress and was still unaware that AAV 5 was in distress. [Encl. (81), (82)]

190. Upon exiting AAV 6, Bravo Company XO spoke to the 3rd Section Leader, who did not mention seeing AAV 5 waving the November flag. [Encl. (81), (82)]

191. Bravo Company XO then went to LFOC to tell the H & S Company Commander about his concerns regarding AAV 3. At this time, Bravo XO was told that the H&S Company Commander’s understanding was that one AAV was still being towed and one AAV was “under water.” [Encl. (82)]

192. Around this time, the 3rd Section Leader, now located in the well deck of SOM, reported that he saw the AAV 5 Vehicle Commander waving the November flag. [Encl. (70)]

193. At 1804, SOM CO was in CIC. [Encl. (62)]

194. At 1805, SOM XO was in CIC. [Encl. (62)]

195. At 1805, SOM called “man the boat deck.” [Encl. (80)]

196. Around this time, AAV 5 Rear Crewman informed the Vehicle Commander that water was at calf level and recommended they needed to evacuate the embarked troops. [Encl. (68), (69)]

197. Following instruction from the AAV 5 Vehicle Commander, the AAV 5 Rear Crewman opened the starboard side cargo hatch to allow troop egress from the vehicle. [Encl. (68), (69)]

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198. Shortly thereafter, the AAV 5 Vehicle Commander looked down and saw that the water was still below the bench seat. [Encl. (65), (66)]

199. As AAV 14 moved to position itself for troop transfer, it was pushed into AAV 5 by a wave and struck AAV 5 on the forward starboard side. [Encl. (86), (87), (91), (92)]

200. At this time AAV 5 was about six inches out of the water. [Encl. (91)]

201. A wave then swept over the top of AAV 5, while the starboard side cargo hatch was exposed to water intrusion. [Encl. (86), (87), (91), (92)]

202. At 1810 the SOM deck log noted a possible AAV “down.” [Encl. (80)]

203. AAV 5 then sank with the following personnel aboard; Private First Class Evan A. Bath, Private First Class Bryan J. Baltierra, Lance Corporal Marco A. Barranco, Navy Hospital Corpsman 3rd Class (Fleet Marine Force) Christopher Gnem, Private First Class Jack-Ryan Ostrovsky, Lance Corporal Guillermo S. Perez, Corporal Wesley A. Rodd, Lance Corporal Chase D. Sweetwood, and Corporal Cesar A. Villanueva. [Encl. (68), (69), (86), (87)]

204. AAV 5 had been in the water for approximately 80 minutes at the time it sank. [Encl. (62), (65), (66), (86), (87)]

205. After AAV 5 sank, AAV 14 recovered the AAV 5 Vehicle Commander, the Rear Crewman, and three embarked personnel. [Encl. (86), (87), (93), (94)]

206. Lance Corporal (b) (6) came to the surface and was recovered by AAV 13. The BLT Communications Chief conducted CPR on Lance Corporal Luis. [Encl. (95)]

207. Lance Corporal (b) (6) came to the surface and the BLT Executive Officer dove into the water to retrieve him and brought him onto AAV 13 where he was given CPR. [Encl. (95), (96)]

208. Lance Corporal Perez came to the surface and was recovered by AAV 14 and was given CPR. [Encl. (65), (66), (86), (87)]

209. At 1812, SOM went to a Red Well status, raised the stern gate, and maneuvered to close the distance with AAVs 5, 13, and 14. [Encl. (80)]

210. Through analysis of meteorological data collected for this investigation, it was determined that at the time AAV 5 sank, seas were from the Northwest at 3 to 4 feet reducing to 2 to 3 feet closer to Red Beach. Winds were from the Northwest at 15 knots or less. The conditions were unchanged throughout the day. [Encl. (61)]



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211. Neither wind nor sea height calculations met the no-go criteria for the amphibious raid. [Encl. (32), (37)]

212. At approximately 1825, SOM launched one 11 meter RHIB. [Encl. (43), (44)]

213. The RHIB went alongside AAV 13 and saw 12-16 people on top of the AAV, two of whom appeared to be unconscious. The two unconscious people were placed into the RHIB for recovery to SOM. [Encl. (43)]

214. Once the CATF learned search and rescue operations were underway, he directed all ships in the area to assist in operations. [Encl. (25)]

215. At 1852, SOM launched two Combat Rubber Raiding Craft. [Encl. (80)]

216. USS JOHN FINN (DDG 113) launched two additional RHIBS and joined the search and rescue operations. [Encl. (62)]

217. At 1853 and 1856, AAVs 13 and 14 were recovered on board SOM. [Encl. (80)]

218. Later that evening, SDG and MKI (LHD 8) launched RHIBS to aid in search and rescue operations. [Encl. (25)]

219. SOM no-go criteria for launching its RHIB was sea state four or greater. [Encl. (48)]

220. At no point that night did anyone relay to CATF any concerns about placing RHIBS in the water. [Encl. (25)]

221. Post-incident analysis of AAV 5 determined that a port-side headlight electrical thru-hull connector was not properly installed, leaving an opening for water to get inside the hull. [Encl. (97)]

222. Post-incident analysis of AAV 5 determined that the transmission drain line was loose. [Encl. (97)]

223. Post-incident analysis of AAV 5 determined that the transmission was almost empty of oil. [Encl. (97)]

224. Post-incident analysis of AAV 5 determined that the starboard rear hydraulic bilge pump was possibly not pumping due to the absence of oily residue on the cover. [Encl. (97)]

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**Opinions**

*a. Did communications, decisions, and actions of U.S. Navy personnel involved in the planning, approval, and execution of waterborne AAV operations originating from USS SOMERSET, whether these personnel were embarked or not, contribute to the mishap?*

1. The CATF and CLF approved Confirmation Brief left in doubt the roles and responsibilities of subordinate commanders. From the Confirmation Brief, SOM CO believed the RFC held the authority to authorize, abort, or delay the splash from the beach. At the same time, the AAV platoon believed permission to splash needed to come from SOM, as it ultimately did. The omission of clear lines of authority, coupled with an absence of an approval process within Navy doctrine, created a critical seam in command and control in the recovery phase, but did not contribute to the incident. [FF (66), (67), (130), (132-137)]

2. The ORM procedures used for the 29 July Confirmation Brief did not identify all hazards of AAV waterborne operations, including the potential for an AAV to sink. If the Confirmation Brief had addressed the potential for an AAV to sink, proper controls and mitigation measures may have been more thoroughly addressed in the planning phase. While not causal to the incident, this likely would have led to greater situational awareness of the risks of AAV operations aboard SOM. [FF (78)]

3. The ARG/MEU Confirmation Brief for Operation GATOR SMASH was delivered out of sequence with the ship's tactical employment brief. Generally, following the Confirmation Brief the ship is able to incorporate guidance from the confirmation brief into the ship's tactical employment brief. In this case, the ship's tactical employment brief occurred prior to the Confirmation Brief and SOM was unable to incorporate Confirmation Brief guidance into its own, more detailed brief. SOM's brief lacked details regarding ORM, scheme of maneuver, and tailored go/no-go criteria. Although the ship's brief lacked commonly expected detail, I do not believe the lack of specificity directly caused or contributed to the sinking. [FF (52), (78), (86-89)]

4. The CATF made two key decisions during Operation GATOR SMASH: (1) approval of a Confirmation Brief that appears to have contributed to confusion as to authority to splash from SCI; and (2) as it became clear that air operations and AAV operations would unexpectedly overlap, the CATF attempted to reduce the complexity of the day by cancelling a scheduled RAS. As noted, I do not believe confusion from the Confirmation Brief directly caused or significantly contributed to the incident. Furthermore, I believe the CATF acted prudently in attempting to reduce risk factors by simplifying operations for the day by canceling the scheduled RAS. [FF (53), (66), (67), (112), (130), (132-137)]

*b. Did communications between U.S. Navy and U.S. Marine Corps personnel leading up to, during, and immediately after the mishap potentially contribute to the mishap?*

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5. Navy and Marine personnel established communication prior to the AAVs splash from SCI and remained in communication throughout the transit and sinking. Although the PCO did not fully understand the communication pathways between SOM and the AAVs, the SOM CIC Watch Supervisor and the SOM LFOC were in constant communication with the AAV Platoon Wave Commander prior to splash and throughout the transit up until the AAV Platoon Wave Commander turned back to SCI to assist in towing AAV 3 back to SCI. When the AAV Wave Commander began the transit back to SCI, communication became less frequent from the AAVs, but it was not due to procedural or technical issues. Once the AAV 5 Vehicle Commander notified other AAVs through the AAV radio net that AAV 5 was in distress, the BLT S-3A in AAV 13 quickly notified personnel aboard SOM through Boat Alpha that a second AAV was in distress. In my opinion, communication between Navy and Marine personnel leading up to, during, and immediately after the event did not cause or contribute to the incident. [FF (121-130), (151), (152), (155), (183), (187)]

6. The internal communication aboard SOM, especially among CIC, the bridge, and the PCO, and within CIC, was ineffective regarding AAV operations despite constant communication between the ship and AAVs. Nonetheless, once SOM was notified AAV 5 was in distress, all controlling stations were notified quickly and acted expeditiously to respond. In my opinion, the ineffective internal communication aboard SOM did not directly cause or contribute to the sinking. [FF (122-130), (133), (138), (183), (184), (187), (193-195), (212)]

*c. Was a clear command and control relationship established and executed consistent with the agreed upon concept of operations and/or established Navy doctrine and did it potentially contribute to the mishap?*

7. As noted above, command relationships were not well established during planning. The PCS did not execute positive control over the AAVs as they transited back to SOM. I believe the lack of positive control can be attributed to the PCO's confusion about who held the authority to splash from SCI and the relationship between splash authority and positive control as the AAVs transited back to the ship. Although the ship was not providing near-constant course direction to the AAV Platoon Wave Commander as required by the definition of positive control, the ship was in communication with the AAV Platoon Wave Commander at all times prior to splash and during the AAVs transit to the ship. In my opinion, positive control was inadequate, but it was not causal or directly contributory to the sinking. [FF (7-13), (66), (67), (119-131), (144)]

8. Positive control over AAVs within SOM is executed in CIC by the TAO through the boat control team. The AMW evaluator was not in place at the time of AAV recovery because he was manning an air control watch station. If the AMW evaluator watch station was manned properly, the would have been better postured to execute positive control of the AAVs. [FF (7-13), (96), (144), (145)]

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9. After executing this investigation, I believe positive control is a critical part of the PCS responsibility for safe AAV operations; however, it is evident throughout this investigation that SOM did not have the knowledge or training to understand positive control in the *recovery phase* as this aspect of amphibious operation is not covered by training or certification. [FF (7-13), (28-31)]

*d. Assessment of the possible impact of sea state on the waterborne AAV operations*

10. A comprehensive analysis of the weather data from 30 July 2020 shows the sea state remained within operating standards for AAV waterborne operations and was within the established go criteria. As a result, sea state did not significantly impact waterborne AAV operations. Given the low water line of a troop loaded AAV, the fact that AAV 5 was taking on water and the troop compartment hatch was open for evacuation, any wave would likely have had the same effect that day. [FF (45-49), (73), (105-106), (146-147), (197), (199), (200), (210-211)]

*e. Assessment of the possible impact of the location, movement and other ongoing operations of USS SOMERSET on the waterborne AAV operations*

11. I assess the operations conducted by the SOM were within permissible parameters and did not have a significant impact or cause the sinking. Per PMINT SOE, SOM's schedule for the day was de-conflicted with the mechanized raid scheduled to end no later than 1245 and aviation support to SACEX to begin at 1300. As AAV recovery and flight operations began to overlap due to AAV mechanical failure while on SCI, complexity increased to a degree not envisioned, but not outside of the ship's established capabilities, for PMINT. [FF (32-36), (69), (93), (110), (112), (115), (131)]

12. The PCO intended to prioritize AAV operations over flight operations. While the AAVs were in transit to the SOM, the SOM increased speed from three to five knots for nine minutes so that SOM could meet aircraft launch criteria as the OOD believed both air and AAV operations could be coordinated concurrently. The first AAVs were recovered aboard SOM four minutes after the SOM decreased speed back to three knots. AAV 5 was in the water for approximately 80 minutes at the time it sank, a timeframe that is within Confirmation Brief and doctrine parameters. The location of SOM at the time of recovery and throughout the AAVs transit was within Confirmation Brief and doctrine parameters. [FF (69-71), (77), (85), (131), (149), (158), (161), (162), (165), (166), (193-202)]

*f. Assessment of the possible impact of the number and type of safety boats involved, and the approval process for the same*

13. In my opinion, the CO had the authority to determine an AAV could be used as a safety boat. The CO also informed the CATF of the plan to use two AAVs as safety boats. However, both the AAV Platoon Commander and the PCS incorrectly believed that the other would be

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providing safety boats during AAV recovery operations. Per instruction in place at the time and in accordance with the Confirmation Brief, two safety boats should have been present for AAV launch and recovery operations. The PCS, in accordance with the Confirmation Brief, should have verified with the AAV Platoon how safety boats would be managed for Phase IV. I do not believe the absence of a SOM safety boat caused the sinking, but I believe a SOM safety boat may have been able to provide a faster response upon learning that AAV 5 was in distress, if the safety boat was in a nearby position and not responding to AAV 3. [FF (38 – 43), (68), (101), (103), (151-156)]

14. SOM commonly utilized AAVs as safety boats. However, I question the effectiveness of AAVs as safety boats when compared to the RHIB's greater speed, maneuverability, and ability to ingress. [FF (76)]

15. The following circumstances likely impacted the PCO's decision-making process regarding deployment of safety boats in Phase IV: discussions during the Confirmation Brief on 29 July of the use of AAVs as safety boats in the event that a Navy safety boat was inoperable; assertions by the AAV Platoon Commander on the morning of 30 July that two AAVs would be used to serve as safety boats; the loss of situational awareness prior to splash that the AAV Platoon would not be splashing with all 13 AAVs; instructions in place at the time that allowed for the use of AAVs as safety boats; and past SOM practice to use AAVs as safety boats. [FF (38), (39), (75), (76), (101), (116), (138)]

#### Additional Opinions

16. Due to time between Basic Phase certification and PMINT, many key personnel and watchstanders on SOM were not present during Basic Phase certification, including during AMW certification. The CO, XO, TAO, and PTO present during AMW certification were no longer attached to SOM at the time of Operation GATOR SMASH. The absence of continuity of personnel from Basic Phase to PMINT led to a lack of experience in AAV operations in key SOM leadership positions. [FF (26), (27)]

17. Based on a reconstruction of statements and records, the first time anyone outside of AAV 5 was notified that AAV 5 was taking on water was at approximately 1800. While there is no log, the first notification was from the AAV 5 Vehicle Commander through the AAV radio net. Following notification through the AAV radio net, the BLT S-3A in AAV 13 was able to quickly notify SOM personnel through Boat Alpha and the ship moved quickly to man the boat deck by 1805. [FF (183-187), (193-195)]

18. Based on time stamps provided within interview statements and corroborating records, the AAV 5 Vehicle Commander began waving the November flag at approximately 1759 and subsequently notified Marine personnel through the AAV radio net that AAV 5 was in distress. I

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believe the total time from the beginning of the AAV 5 Vehicle Commander waving the November flag until AAV 5 sunk was between 11 and 13 minutes. [FF (159-160), (169-190)]

### **Recommendations**

#### a. Actions in Progress

1. Continue update of Wet Well Manual to include: mandate safety boats other than AAVs/ACVs; require clear radio communications between the PCS, AAVs/ACVs, and safety boats; direct that only the ship CO or PCO can authorize AAV/ACV splashes from ship and shore; and require standardized pre-splash briefs between the PCS and AAV/ACV Wave Commander.

#### a. The following references are also currently under Navy-Marine Corps review and should reflect the changes outlined above, as appropriate:

- CNSP/CNSL 3340.3E Wet Well Operations Manual
- NTP 3-02.1M Ship-to-Shore Movement
- MCTP 3-10C Employment of Amphibious Assault Vehicles
- JP 3-02 Amphibious Operations
- USFF Navy-Wide OPTASK AMPHIB DTG 111354Z JAN 17
- NAVMETOCCOMINST 3144.1E, the Manual for Weather Observation

2. Continue and expand the review of PMINT evolutions as implemented in the ESX ARG/ 11th MEU PMINT to ensure schedule of events is appropriate with the, “crawl” stage in, “crawl, walk, run” methodology as detailed in the Amphibious Ready Group Fleet Response Training Plan (FRTP) and Marine Expeditionary Unit Pre-deployment Training Program.

3. Monitor the five week Senior Amphibious Warfare Officer’s Course (SAWOC) that will be piloted late summer of 2021 and ensure it includes an integrated USN/USMC training module. It should also be required education for prospective COs of Amphibious Class ships.

#### b. Immediate Actions

4. The Maritime Working Group, in coordination with the Blue Ribbon Panel, should form a focus group no later than 1 Aug 2021 to recommend solutions to shape amphibious force Basic, Advance, and Integrated Phases. The end-state should ensure the requisite experience base is developed throughout the FRTP with specific focus on the “crawl, walk, run” training methodology. Participation should leverage former ARG and MEU commanders along with SME’s from SURFOR, FMF, EOTG, SMWDC, CSG-4/15, ESG-2/3, EWTG, and TTGP/L.

5. AMW certification should be immediately modified to include CIC and boat control team demonstrating positive control of AAV/ACV shore-to-ship movements. Current training and

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certification only focuses on well deck control and AAV ship-to-shore movements, neglecting shore-to-ship movements.

6. NWDC should immediately promulgate guidance and develop follow-on doctrine for techniques and procedures for shore-to-ship amphibious craft movement.

c. Deliberate Actions

7. Include AMW as a Watch Team Continuity Critical Warfare Area in order to maintain continuity of key positions for the Boat Control Team/Amphibious Operations.


8. Review ARG/MEU Staff Planning Course program of instruction to ensure sufficient coverage of amphibious doctrine, CATF/CLF responsibilities, amphibious C2, nodal analysis of controlling stations, risk assessment, and AAV sinking case studies.

9. Field and mandate a modernized, web-based ORM planning tool to facilitate amphibious planning. This tool should compile relevant planning factors, such as operational readiness and mission requirements, with a database of AAV incident lessons learned to help planning staffs better forecast aggregation of risks and implement controls and mitigation measures. Similar to the U.S. Army's Joint Risk Assessment Tool, this tool should encompass Navy and Marine Corps operations and be compatible with shipboard and limited bandwidth application.

10. Assess XO/CO Fleet Up assignment process of all L-Class ships in order to balance the CO/XO experience levels for ships that conduct combined surface and aviation operations as done for LHDs/LHAs.

11. Assess communication pathways for low freeboard amphibious vehicles to include contingency communications plans.

12. A single, standardized method of determining sea state should be incorporated and mandated for all Naval Forces.

  
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