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SENIOR MEMBER GUIDE

INTRODUCTION

The Naval Aviation Safety Program's objective is to prevent mishaps by identifying and eliminating hazards *before* they cause injury or damage.

A mishap is a failure of prevention and invokes the Program's secondary response, an investigation to find the hazard(s) which precipitated the mishap and to recommend remedy to prevent recurrence.

The essence of an Aircraft Mishap Board's task is: gathering evidence, deliberation, determining cause and proposing remedy. The underlying process is logical and familiar: observation, synthesis, conclusion, response.

The purpose of this guide is to aid a prospective Senior Member by discussing activities surrounding a worst-case mishap (strike damage with fatality). Widely differing circumstances in each mishap preclude a one-size-fits-all solution. This is not a checklist; it is a primer which discusses collateral tasks, topics and problems a senior member may encounter. It provides method and traffic directions for those who have not traveled this way before.

In principle, a senior member needs only an inquiring mind and penchants for small-group leadership and project management.

This guide was prepared by the Naval Safety Center's Aircraft Mishap Investigation Division. Recommendations for improvement to the guide are invited.

The First Day

An aircraft is down. You are the senior member of the Aircraft Mishap Board. Competing demands erupt, and it seems everyone is looking to you for answers and action.

What happens on the first day amounts to people and agencies executing planned responses to a disaster. Think of it as the memory steps for an immediate-action emergency procedure.

The mishap squadron has duties to attend to immediately in the wake of a mishap. The following have precedence over AMB activity. Initiate rapid response (crash/fire/rescue, emergency medical, security). Make internal notifications (CO, XO, department heads, staff). Notify the operational chain of command (OPREP-3, by telephone and message). Commence casualty notification to BUPERS/CMC and to the next-of-kin of those injured, missing or dead. Stand clear of squadron executive, admin or ops personnel performing these essential duties.

When those obligations have been initiated, make a telephone notification to the Naval Safety Center (NLT 1 hour for Class A mishap) and back it up with an initial Mishap Data Report message (within 4 hours for Class A & B).

Who's in Charge?

You are. Whether you're an interim senior member awaiting relief or an externally appointed senior member, the first on scene is the senior member for the purpose of this discussion of immediate response.

An interim senior member has authority and responsibility to direct the AMB until replaced by another face-to-face. He must not delay proceeding out of concern about what a relief might want. Some evidence is perishable and best gathered fresh. Do not wait for someone whose arrival might be indefinite.

First things first. You will not solve the mystery on Day One. The day's activity will be spent doing what needs doing: taking care of the living, putting out fires, evacuating the dead, establishing AMB presence, and making the mishap site secure.

Resist the temptation to rush to the mishap scene. Although the Board will be itching with curiosity, its first response is not to scramble to the site. Crash/fire/rescue, medical and security personnel constitute the first wave to a crash site. The site will be in goods hands until you arrive a little later and better organized.

Convene the Board.

Assemble and Organize

Gather to count noses and pool information. Assess your situation, then move with direction and purpose.

Take notes. This parenthetical consideration applies throughout an investigation. The information each member acquires, the observations each makes will quickly exceed short-term memory and be lost. To prevent wasting time in recapturing the same information, take notes. A pocket-sized notebook and pen are an investigator's most valuable tools.

Counting noses. You need operations, maintenance, medical and safety members at a minimum; one must be a pilot qualified in model. The senior member must be senior to the pilot-in-command and mission commander of the mishap aircraft. Other members may be added for subject matter expertise as the mishap context becomes known, or to simply distribute workload. Refer to ONI 3750.6R, paragraph 206 for detail on board composition and exceptional circumstances.

If any member is not available or disqualified by context from the investigation at hand, the senior member must weigh how tasks can be redistributed (short-term) and where to seek replacement. Canvas Board members for the following:

- availability through the investigation's expected duration (30 days is typical)
- direct involvement in the mishap
- a personal interest in the mishap which might impede objectivity or impartiality while performing AMB duties.

If the senior member finds the membership of the Board inadequate to existing or foreseeable requirements, he should contact the reporting custodian (squadron CO) for suitable replacement. In the event the reporting custodian cannot populate an adequate AMB, he should request assistance or relief from the controlling custodian, as explained in OPNAVIST 3750.6R, paragraph 605.

Pooling information. Here begins the rigor of evaluating information: is it authoritative, first-hand, without speculation? It will be incomplete. Notice or rumor of a mishap can come from any quarter: ATC, base radio, police, news media, a bystander. Obtain as much detail as your informant has: location, time, damage/injury, survivors, agencies responding or on-scene.

Maintain an intellectual detachment: some of what passes for "known" shortly after a mishap turns out to be inaccurate, even wildly so.

Grasp the following if information permits: mishap context (mission, equipment, stores, route, mishap locale, weather); damage to aircraft and surroundings; survivors and casualties (crew, passengers, personnel on the ground). You will notice the elements of information form only a distant view of what happened, where and to whom as opposed to why, how and by whom. The latter describe cause, are harder to resolve and require more information before you can form authoritative conclusions. You're not there yet. Other matters are pressing, so don't linger over missing details.

Take the reins, and go to work

Verify the squadron has commenced initial reporting (OPREP, next-of-kin notification). The Board should not compete for the attention of personnel accomplishing these. This caution against interference expires quickly.

Confirm safety reports (by telephone & message) have been made, or designate someone to do so. The ODO might have done both already; safety and ops members are capable of doing it.

Briefly consider the prior division of duties among Board members. Lists in various guides divide investigation activity; this coordinates action to cover a lot of territory in quick time. Unless otherwise amended, those lists constitute the plans of respective members once adjourned. Mishap circumstances might necessitate a change in items' priorities or might eliminate some altogether.

Some actions are deferrable: they will keep until you get to them a day or two later. Take documentary and real evidence (records, ATC tapes, preflight fluid samples) for example. While it is important to isolate these as a snapshot of conditions preceding or at the mishap, the information they contain is not perishable. Gather them for safekeeping until time permits review or analysis. Squadron records or samples can be gathered in an hour by one person. A call to the supervisor of a military radar facility (terminal, tower, target) will reserve radar and voice recordings for later use. For the same from FAA facilities, contact the military liaison at the respective FAA regional headquarters.

A contrasting example is witness information. Accounts change as witnesses reflect, compare accounts with others, and read (news, NATOPS, MIM). Get witness information before it is contaminated. On the first day, it might be sufficient to identify witnesses, make contact and request from each a written statement. An AMB member can return for an interview, but should do something immediate to preserve

details each witness might have uniquely; a timely, written statement helps to do that. Some high-value witnesses (aircrew, aviation-acquainted eyewitness) ought to get the full treatment at your mutual, earliest opportunity. This is a calculated bet; at stake is precious time you might spend doing something else.

Look over the first-day checklists or have each member state his intentions. Affirm or succinctly alter near-term (today's) tasks. If you add or redirect a task, name who is to do it and its precedence among his other tasks.

Appoint a time and place for your next meeting

Arrange transportation to the site. Members who are not needed elsewhere should accompany. If no member has an adequate camera, reserve a seat for a photographer unless one is on site already.

Going out the door, you will have what you are wearing, possibly what the unit staged in its crash kit. Expect the kit to be short some gear; not all wrinkles will have been foreseen. Knowing where to get something quickly is good enough. You might have to visit base supply, a sporting goods store or hardware en route for items not in the kit. Keep your receipts and hope the disbursing folks are reasonable.

Do not count on hot-and-cold running transportation unless the keys are yours. Corollary to Murphy's Law: the more inaccessible the site---the higher the likelihood of being stranded. Think about precipitation (clothing) and RON (water and food). Like the Boy Scouts, Be Prepared.

Scratch the itch. Adjourn the meeting and go to the site.

Crash Site

Board members benefit from a first-hand visit. Seeing accelerates comprehension and is essential to describing the mishap in your report.

Exercise caution and restraint. The site and wreckage will have hazards unfamiliar to visitors, and visitors are inherently a hazard to evidence. No one from the Board or its working party should be on the wreckage until it cools to outside air temperature.

Consider your first visit a reconnaissance. Withhold hasty judgments: understanding will take time and complimentary evidence not at the crash site. Resist the delusion of solving the mystery before sundown: you are likely to jump to a wrong conclusion. Patience. See the forest before barking up trees.

Walk wide around wreckage and ground scars to see the site from every angle. Look for indications of flight direction and descent angle, then imagine the cockpit view. Take in the BIG picture, and have the photographer do likewise.

Satisfy yourself the aircraft is present or accounted for: missing parts might be cause to expand the search back along the flight path. If the four corners (nose, tail, wingtips) are on site, the structure between them is too; still, bits (aileron, stores, turbine wheel, etc.) can have departed before impact. Helos have more than four corners, so the process is more difficult: blades (extremities to count) usually fragment on contacting ground and can hurl hundreds of feet from the airframe.

Keep your hands in your pockets. Do not charge into the wreckage to open panels, flip controls or try switches. Disorganized, undisciplined handling of the wreckage disturbs evidence and leaves no record of condition as-found. The safety investigation has precedence over other concurrent investigations, but the AMB must take care not to spoil evidence which others will also need to view. Sifting through the wreckage will keep until the AMB has a coherent plan to examine it by layers, like peeling an onion. Your initial focus is the large view, a reconnaissance.

Assess the environs, the distribution and condition of wreckage. Assess whether the wreckage is safe to begin work: fire out, ordnance and pressurized vessels made safe, fuel siphoned off. On sloping or forested sites, be wary of deadfalls: parts in trees, tree trunks/limbs severed but not fallen to ground,

rocks precariously ready to tumble. Determine what will be needed to guard the site, to find, look at and plot the scattered wreckage. Consider equipment and working parties needed to work the site, then consider how both will get to the site.

For the present, the higher concern is to exploit the wreckage in place for information it will yield as it lays, information which might be lost when you begin to disturb it. When that course has been exhausted, concerns will turn to removing the wreckage to accomplish what could not be done in the wild or what is better done under controlled conditions.

The whole Board need not stay at the mishap site longer than is required to appreciate the big picture, make initial assessments and post security. Once all have had a look, get down to business. Only one or two members need remain at the site to continue working or direct others there. Consider who is better employed on the site, who has more urgent tasks elsewhere.

Do not work a crash site without light. Doing so poses risk to personnel and evidence, with low prospect for reward. Post security and retire from the site before dusk (or make provision for abundant artificial lighting). Allow time for departing personnel to pick their way back to a roadhead before light fails. You will not finish an investigation in a day, so keep your personnel fresh for tomorrow and beyond.

While touring the site or riding back, exploit your captive audience and their newfound common focus. Pose questions. What can be determined (speed, flight path, attitude, configuration) from the lay of the wreckage, ground scars and degree/location of aircraft deformation? To what extent can the wreckage be examined where and as it sits? What are the local maintenance or engineering capabilities (OMA/IMA/NADEP), and what assistance is needed on site? What personnel, equipment or items will facilitate the following days' activities? Have a member take notes: these form a list things to do, things wanted but deferred, and support the Board will request.

Wrap up

Offsite. Briefly reconvene the Board. Members might have gone about tasks separately, but their product is necessary for common information. Have each member present his progress and findings since last convened, to bring all abreast of developments and to build the Board's grasp of available evidence. Confine discussion on the mishap to observations and facts.

Assess what will be needed for the continuing field investigation. As discussed above, you first exploit the wreckage where and as it is. Excavation, lifting, carriage, relocation and disassembly follow in due course...later. Confine discussion on the mishap to observations and facts, and how to get more. Without a substantial body of evidence, deliberations on cause are premature.

Plan. Make assignments. Do not count on all going to the site daily. Once all have seen it and have a common foundation, employ each according to his talents and availability.

Consider whether the AMB needs augmentation with additional members, or whether it needs on-site technical specialists (not admitted to membership or privileged access). Initiate requests for such augmentation or assistance to appropriate sources. The squadron CO might be the appropriate source for another member with specific crew qualification; the group or wing can provide a physiologist. The type commander might be the nearest source for an ATC specialist. Technical expertise may be obtained from the cognizant engineering activity (usually a Naval Aviation Depot) or from respective aircraft/component manufacturers.

Preview tomorrow's activity.

- Interview witnesses. For those from whom you have gathered statements, read them before scheduling an interview. It serves no purpose to reserve the time, then find a witness has nothing to contribute.

- Diagram/survey/plot site and wreckage as appropriate.

- Review records, tapes, radar data in order of their likely potential (varies by mishap context).
- Outline wreckage examination on site (items and sequence). List tools/people required.

Designate a board room where you can continue to meet and conduct business. You need exclusive-use space, secure file storage (or keys to the room), telephone, work table, blackboard (or equivalent), and access to a copier. A computer is helpful, as is a clerk typist who tells no tales. If you lack any of the preceding, exercise your O-5 horsepower tomorrow to get as many as you can. For a mishap too remote to shuttle from a base, your parent command may authorize renting a meeting room or hotel suite. Equipment can be rented.

Adjourn in time to allow members to do their independent work, eat and rest. Take a long view: you're in this for more than a few days. Begin to pace yourself and the Board.

Site Security

Anticipate a crowd: a disaster site is a magnet for the curious. Anyone on site who is not part of a solution (CFR, EOD, investigation, security, working party) is a hindrance, at risk to their safety and yours. Tactfully, but firmly, dissuade visitors regardless of rank.

Most people are deferential to uniformed personnel and respectful of roadblocks, gate guards and a marked perimeter.

Some people require reminding. Site guards will take your lead. When you take charge of a site, brief security personnel who (by name, affiliation or capacity) may be admitted; a list alleviates confusion for subsequent reliefs. Be prepared to back them up, because there will be requests for exception. Requests will come from press, government functionaries and military personnel who drop by. The site is yours to conduct an investigation; you are not obligated to run tours. Refer press to the serving PAO. Ask government officials and military personnel their jurisdiction/capacity and "What can you do for me?" Commanding officers of involved units are worthy; all others are suspect. If the visit has merit, provide escort, keep it short and do not disclose privileged information. If someone's purpose is eyeball liberty, let him to do it outside the perimeter.

Personnel conducting a concurrent investigation (JAGMan) may legitimately have access to the site to view the wreckage. They should not proceed to disturb evidence without prior consultation and your consent.

Military personnel may not exercise police authority off-base. Be prepared to engage (mooch...hire, if necessary) police or sheriff's auxiliary for security off a federal reservation.

A landowner can make trespassers unwelcome, alleviating some of the security and crowd-control burden. He can authorize your cutting a fence or blazing a trail through his green corn. Or he can tell you to hike all the way around a quarter-section for a less advantageous access. Be nice to the landowner. Corollaries apply when working with state/national forest agencies, Bureau of Land Management, and so forth.

Field Investigation

The Second Day and Beyond

The Board will be drawn in different directions by simultaneous efforts to examine artifacts at the crash site and to pursue compelling aspects of the investigation elsewhere. Each can go on concurrently...and should.

The following section is broad advice to the Senior Member. The essence is to encourage a wide perspective and discourage preoccupation with inviting targets better delegated to members or surrogates for the Board.

- Make and carry a grocery list: tasks, questions, observations come at a rush. Your attention will be saturated to the neglect of the big picture unless you keep track.
- Howgoesit must be continuous. Note progress. Assess what needs doing now and next, what can be done with assets at hand, how and by whom.
- Do not dwell on the difficult or impossible. This is a clue you need competent assistance.

Review Yesterday's Activity

Consider what was done, what was initiated but is incomplete, and what was deferred. Aside from the wreckage, candidates for the Board's continuing attention include further site assessment, photography, augmentation/assistance requests, and witness/documentary evidence gathered but not yet digested.

- Site-and-wreckage: assessment of stability and accessibility were initial concerns. Determining the extent of wreckage scatter, and documenting it will run into the second day. Reading site and wreckage for clues come next. Excavation, disassembly, pickup and removal from the site come later.
- Photography: if a complete suite of as-found photos was not made on day one, today is the next best opportunity. - Assistance: acknowledge the limits of the Board's collective capability and reach out for the help you need. Request early. Make the system work. See the section on technical assistance.
- Witnesses. Yesterday you found them and requested a statement or held a hasty interview. Today read their statements. Begin interviews in earnest, starting at the top of a prioritized list. Interviews are discussed below.
- Review impounded documentary evidence and recordings. These were sequestered at your request yesterday and will be available for review on-call. Detail a member to sample tapes and be satisfied whether (1) there is information of use and (2) further processing or analysis will be required. Likewise with other records and documents.

Photography

Aside from documenting conditions as found, photos can record the Board's manipulation of the wreckage. Additional items will appear as work continues at the site.

Have a photomate detailed to the AMB for the first day after a mishap. Need for a dedicated photographer diminishes quickly. You can shoot your own. It is economical of personnel and transportation for a Board member to shoot, then present his film to the station photo lab for development.

It is not enough to tell someone, "Shoot this," and walk on. The photographer's product will be of better use if everyone who requests a shot also tells the shooter what the picture is supposed to show. Specify the following as appropriate: closeup or wide angle, background (in-focus or not), light (more, less), viewing angle, other object in view for scale, anything to make a picture a better exhibit.

Obtain shots of anything that excites interest, but ensure you have a before view of everything likely to be disturbed by manipulation (yours or others'). The cockpit (switches, levers, gages) springs to mind; engine control linkage (input and feedback mechanism) are another favorite.

Color film is cheap; prints are dear. Shoot liberally: until the investigation is far advanced, no one knows which photos will be the best exhibits for a report, but opportunity might have passed.

Multiple 8x10 glossies of every shot are wasteful: you will be inundated with excess material, and your welcome at base photo will wear out early. Request a proof sheet of each roll, then select the views you want produced in full size. New digital copiers make excellent reproductions, so obtaining multiple prints of photos for desired MSIR enclosures is possible from one master on file.

Unless a photo represents a speculative association staged by the AMB, it may be considered real evidence and shared with concurrent investigations, and with the engineers or technical representatives you consult.

Documents, Records

Some boards go days without sifting and appreciating pivotal information already in hand. The first day's impound will have yielded a substantial collection. Mine these resources. Go back to their sources promptly with questions they stimulate, while memories are fresh.

Evidence in hand has three potential consequences: it can verify what has been offered or presumed thus far, indicate a new course for investigation, or permit closing an area of the investigation. Some inquiries simply affirm situation normal. When you are satisfied you have that affirmation and there are negligible indications otherwise, make note and move on to the next area needing attention. Having reviewed these, organize and securely store the evidence you collect.

Assistance with Field Investigation

What is needed will depend on circumstances unique to the mishap. Most mishaps require people at the crash site to assist the Board with reading the wreckage and, later, to accomplish a recovery. Some mishaps justify bringing subject-matter experts to the site for detailed examination before evidence is disturbed or to guide removal of exhibits for examination elsewhere.

Get the support you want. The chain of command and your community want you to succeed (find the cause(s)) and are willing to help. They can not read minds. Make your needs known to people who can deliver assistance.

Technical Assistance. If you decide you need assistance, ask for it pronto. A telephone call is usually sufficient to bring subject-matter experts to your location. Requests for equipment, materials or personnel not organic to your chain of command (e.g., salvage) should be conveyed in an amended Mishap Data Report (in paragraph 7) requesting your controlling custodian obtain them. Assistance from outside the Department of the Navy can be arranged by contacting the Naval Safety Center. Technical assistance and salvage are discussed in detail in separate sections of this guide.

Work Details. Working parties are a necessity. Tasks vary with mishap circumstances and condition of the aircraft, so requisite qualifications can vary from fitness for heavy lifting to the systems acquaintance of a QAR. Personnel are usually drawn from the mishap squadron or contract maintenance provider. When exploiting wreckage for evidence, maintenance personnel are a great aid in name-that-part and how-it-works discussions which go with examination.

Be wary of overtasking anyone. Reserve risky jobs to professionals capable of handling them: a logger fells trees, an equipment operator runs machinery, and so forth.

It is possible to muster too much help or help which cannot be used...yet. Some activities depend on preceding work: stack them for serial accomplishment. If an aircraft sits in a crater in a forest, little investigating can be done until the hole is excavated. That waits until trees are felled and a trail blazed for digging machinery to reach the site. A backhoe operator will refuse to dig while people are in the hole or loitering within the arc his bucket can swing. Mechanics to help examine wreckage need not be on site until the aircraft is above ground. Keep excess players in the dugout until they are next at bat.

Take care of the troops. People need guidance at unfamiliar employment: tell them what to look for, what to avoid, how to conduct themselves on the site.

Invite their input. Everyone who works on aircraft has some kind of expertise. Expand your grasp and view by asking the working party to look for and call to your attention distinctive signatures or unusual damage on the wreckage as they handle it.

People need food, water, protective clothing, toilet, transportation, lodging and rest. Have ample potable water to serve everyone through the day and into the night watches. In hot weather, replenishing electrolytes is essential. If the crew will eat on site, stage more water to permit washing before eating. Position food, water and utensils upwind, at a distance from wreckage or excavation. Call everyone off the wreck for a break and let them rest while they eat. If rain threatens, set up service and eating areas under a tent or tarp.

All on site will be doing hard, dirty work; they will perform better if comfortably clothed and adequately equipped. A standard uniform might not be appropriate for the climate or for the work performed; augment or modify it. Obtain and issue foul weather gear, protective clothing, accessories as needed.

Don't have a mishap while investigating one. There are hazards aplenty to unfamiliar work in unaccustomed surroundings. Consider the brew of heavy objects, jagged metal, mysterious residue, combustibles, explosives, rough terrain, weather. Think about self-preservation, then extend that to your shipmates in spades.

A spirit of volunteerism underlies public and internal response to a mishap. Can-do runs high on a crash site; enthusiasm will overrun caution if permitted to do so.

Do not take the unfit or infirm to the field. Digging, lifting and toting in the wild will tax the most fit. Have a corpsman at the site so long as potential exits for injury during work details. Have communication from site to rear (base CFR/sheriff/forest service...) and transportation to the nearest emergency medical facility.

Plots, Diagrams, Surveys

A representation of the mishap site is not a required enclosure to the SIR; it may be an enclosure if you find it helpful. Regardless of whether one goes into the final report, it can be an aid the Board proper. A record will show how and where things were found (when you sit down to write); it can be an analytical tool to figure aspects of ground collision and breakup. The decision is yours. Method, formality and level of precision are not assigned. Do what best suits your need and purpose.

If you forego the opportunity early, it will be difficult to recapture. Ground scars disappear under vehicle and foot traffic or precipitation; parts' original locations are lost when they are picked up.

For wide scatter (high speed/low angle impact, in-flight breakup, midair collision) consider using GPS to plot wreckage. For more confined distribution (vertical entry, flat spin, slow speed), a simple grid or heading/distance-from-center might do. For a site of a few acres with extremities in the hundreds of feet, a long tape and a compass will suffice; record observations on graph paper or in a notebook.

Maps. The largest scale (small area, high level of detail) map available is usually best. Scale 1:50,000 is marginal; 1:25,000 or lower is better. Infantry units have them. Federal and state agencies overseeing public land have limited stock. Sporting goods stores stock maps for hunters and hikers. Base civil engineers can print custom-scaled maps for facilities they manage (helpful for mishaps on or near a runway). Stores with computer software will have maps-on-CD programs; these maps might be of national scope and short of detail when pushed to close views. Try before you buy, or read the wrapper carefully, to ensure it will support the level of topographic detail you desire.

Site Security

Previously discussed, but worth emphasis. People who were deferential to the emergency response the first day might be bolder today. Day Two crowds will be the indefatigably curious, including idle military personnel. Be prepared for flimsy pretexts advancing on your perimeter. Back up the security detail, or become a tour guide.

Supervise those admitted inside the perimeter. Manufacturers' representatives should travel with a board member or engineer from the cognizant field activity and competent on the system of interest. Contract maintenance personnel should work under supervision of a board member or trusted agent (e.g., NATAMSACT).

Uniforms make your presence separable from onlookers and diminish crowd control problems by distinguishing players from spectators.

Inquiring Minds Want to Know

The Senior Member is the communications focal point for the investigation. Assume the safety reporting load from the SDO/ODO at your earliest convenience.

Not all inquiries to the Board merit a personal reply; some merit none. It is sufficient to inform the appointing authority and reporting custodian of the investigation's progress (nonprivileged, factual information) and of assistance required. Some few others might need selected information to provide assistance you want of them. The rest can read of the investigation's progress in Amended Mishap Reports.

Some external pressure is real; much is imagined. The precedent you establish in external contacts will encourage or deflect return visits. If you are a 'soft touch,' expect to be touched often. Focus on these three facts:

- Senior Member answers to appointing authority (actual).
- The Board works at the direction of the senior member.
- The investigation takes precedence over other duties.

It is that simple. Middlemen or staff do not wear the boss's rank. Board members approached by interested outsiders should tactfully decline intrusion on AMB proceedings or request for disclosure. Should the requestor be persistent, he should be referred to the Senior Member or to the appointing authority.

It is necessary to communicate with the JAG investigator. The JAG may observe wreckage at the site or layout, observe its handling and components' disassembly. JAG needs access to documentary evidence (logs, records, ATC tapes); this does not extend to AMB work product. Access should be arranged for mutual convenience. The AMB is obliged to disclose witnesses' names; their privileged statements or interviews may not be shared.

If the Board discovers a hazard which poses an imminent threat requiring immediate notice (before the investigation report comes out), an urgent hazard report should be issued as described in OPNAVINST 3750.6_. Otherwise save findings and conclusions for the SIR.

It is a PAO's job to represent the Navy or Marine Corps to the press. Leave press commentary to a pro. If approached, board members should refer inquiries to the serving PAO by name and phone number.

Hurry Up

Most deadline dread is self-inflicted. A mishap investigation is an unfamiliar job, and you will not be master of all resources. Some projects' outcome and completion are hard to predict because they are ill-defined, layered or infrequently practiced. For example, a backhoe operator tries to please when he estimates time to excavate the crater where your wreckage rests. But craters are not a standard commodity: no one can know how deep one is until the bucket stops scooping parts. Don't recycle his cheery estimate to others by announcing the wreckage will be out of ground by 1200; don't commit dependent plans to execute at 1201. Conservative estimates and flexible plans.

Interviews

Not all witnesses need be interviewed. Weigh the merit of spending time with selected witnesses. How? Read their statements. A written statement aids in determining which witnesses don't have much detail to offer, but it is not foolproof.

Writing is difficult for some. Some witnesses know more, but write little. If you expect a witness knows more than he wrote (or ought to), interview. Some witnesses warrant interview regardless: crew, best vantage point, pivotal position in the mishap's background, aviation-acquainted eye-witness.

A purported eyewitness whose account begins, "I heard an explosion, turned and saw a fireball...," can vouch only time and weather. The rest likely will be borrowed or speculative. The best question for such a witness is, "Can you provide me the names of any others who saw the mishap?" Ask by phone.

Rank witnesses and start interviews with the best prospects.

Not all the Board need attend. A large audience intimidates. A small audience is more likely to put a witness at ease and elicit cooperation.

Listen to and learn from each witness. Let your witness tell his story in narrative fashion, without interruption. As the witness speaks, take note of details you want amplified, but reserve your questions until he has finished his narrative.

A witness is a frail source of information, neither right nor wrong. A witness will take cues if you are unwise enough to give them. Audible cues and body language can indicate validation or disagreement, subtly smothering his account. The best technique to cultivate a witness' candor is to pay rapt attention, but maintain a benign poker face.

Talk directly to the witness at his level of sophistication. Phrase questions in the witness' words: if he calls a drop tank a 'big gray thing,' you call it the same. Avoid contaminating the witness with information he has not offered. For example, if he has not mentioned fire, do not imply there was one by asking, "Where was the fire?" Instead ask, "Did you see smoke or flame?"

Allow an eyewitness to manipulate a model or use a picture or map to show what he lacks words to convey. Classic example: 'spin' has specific meaning to a flyer, but a witness without aviation background might apply that term to movement about any axis. In like fashion "It went straight down" has been offered for every angle on a protractor, not just vertical entry. A model allows the witness to represent what he saw, even though unfamiliar with aviation terms. The same applies to taking an eyewitness to the place from which he saw the mishap: he might point out what he could not articulate with precision.

Give precedence to the first version. You will revisit some witnesses because new information you acquire will stimulate new questions. A witness will have had opportunity to reflect, absorb information from other sources and rationalize. Stories change. As witnesses confer, there is a tendency to a consensus account as each adopts detail from others, and loses or suppresses what had been a

distinctly individual perspective. This is not necessarily devious, just a natural tendency to fill in blanks and cope with a sensational event.

Reconvene

Quit before dark and convene at day's end. Close down the site and post security. Finish business with your working party and technical assistants. With working party supervisors and technical assistants, summarize activity and plan into tomorrow. When this is finished, excuse all who are not open to privilege.

Have board members summarize their findings and work started or done, one by one. Check progress and difficulties. Close off finished business and note findings to avoid later having to reconstruct the same (it happens). Assess which matters need further development, possibly additional personnel. Task as necessary.

Unless guided, meetings can digress to speculation on cause. The temptation goes with the territory. Until the investigation is well underway, discipline yourself and members to remain at the task of discovering evidence. The Board may entertain possibilities at any point, but must make judgments only in light of sufficient evidence.

Adjourn. Let all shower, change, get a hot meal and sleep before you do it again.

Wreckage Recovery

Not on Day One, rarely on Day Two, but sometime...the Board will foresee an end to working with the wreckage at the crash site. Plan a recovery, then stay engaged (directly or with another member as proxy) at the site to supervise its execution. Remember many of your assisting Some of the work will be performed by personnel whose only qualifications are availability and fitness for heavy lifting

Consider where the relocated wreckage will go. This depends on what more the Board wants to do with or to it. A layout (reconstruction) might occupy 4 times the floor space of an intact aircraft. A less extensive reconstruction or handling to remove engines or actuators for examination takes less. Final storage for packed boxes and chunks of aircraft takes the least space. A crane or forklift requires headroom to lift and clear space at the sides to maneuver. When you have decided the level of activities, arrange secure space accordingly.

Wreckage will have been located; small parts might have been flagged or marked with surveyor's tape to make their locations more noticeable. Decide how to collect it. The pickup process usually involves people for small parts and machines for heavy lifting. Boxes on pallets staged throughout the site facilitate pick up by hand and deposit without a long trot. Whether you fill boxes according to location (crater, secondary impact site, periphery) or by types of parts (airframe, engine, controls, etc.) is a matter of choice. Objects too big for boxes can be palletized or lifted directly. Laden pallets and big objects should be lifted by rough terrain fork lift, crane or by helo.

Transport. Flatbeds for long, wide or tall pieces; stake-beds suffice for the rest. If some disassembly is required, consider carefully beforehand because doing so might separate items whose association should be noted before evidence is lost. It is helpful to line a flatbed with a big, throwaway tarpaulin and wrap it up-and-over the load before tightening the load straps; this prevents small parts (it's all evidence) from becoming highway litter. The tarp will be junk when the job is done due to tears and leaking fluids. Avoid rush hour traffic.

Offload and place boxes and objects to facilitate access for further work. For example, make room to maneuver hoists, toolboxes, engine stands and so forth.

Administration and Logistics

In General...

You had a full plate yesterday at another job. A mishap has occurred. Today you are the Senior Member of an Aircraft Mishap Board.

You cannot serve two masters well. OPNAVINST 3750.6_ resolves the conflict succinctly: "Mishap investigating and reporting responsibilities of AMB members shall take precedence over all other duties."

Compartmentalize. Transfer work to an able assistant. Tell Schedules you are out until further notice. Leave.

When you cut the cord, mean it. If you relent and establish the precedent that you are accessible for routine matters, old business will follow and compete for attention.

Come as You Are

Time will be too much at a premium for the Board to attempt remedial training. When the crash alarm sounds, you will execute a mishap plan already rehearsed, or you will undergo trial-by-fire.

The Senior Member's charter is to guide the Board in accomplishing its task: investigate and report. You do not have to become an instant expert in investigation, maintenance, operations or medicine. A Senior Member has to deliver what is expected of seniority and experience: focus, objectivity and leadership to marshal others' activities to an end.

In time, collective efforts will reveal a substantial body of information from which the Board can synthesize an explanation of the mishap and recommend what Naval aviation should do about it.

If you join a Board with which you have not trained, rapidly assess its preparedness. Board training will have apportioned duties or tasks for to each member to accomplish separately, but in a context of coordinated action. Prioritize or redistribute tasks as you see fit; add to them as necessary. Otherwise, those lists constitute the plans of the members. Validate assignments. Appoint a time for your next meeting, then send members out to do their jobs.

Perspective

The atmosphere surrounding a mishap might be chaotic. In most instances, a mishap investigation can and should proceed without impeding the mishap unit's continuing operations. Get your bearings, then go to work.

Determine what needs doing immediately, what can be done, how and by whom. Do not dwell on the difficult or impossible; take these as a cue you need (external) help in some capacity.

An enduring concern for Board activities is safety of involved personnel and bystanders: Naval aviation will already have had a mishap---let's not have another while investigating the first.

Attention should turn early to obtaining or recording that evidence which is most perishable, by human activity and frailty, or by forces of nature. Since a safety investigation usually has precedence over other inquiries for access to evidence, the Board has a duty to preserve that evidence for others' use (if possible), or to account for changes which result from handling and examination. Where it is possible to share access to real evidence (nonprivileged), the Board may do so, at your discretion.

Not all evidence is privileged, nor need all sources be promised confidentiality. Know the difference and treat the different types with appropriate care. (See discussion below.)

Think outside the box. View problems from various angles.

This applies to effecting the wreckage recovery, exploring the evidence, considering how things work, the order and consequence of procedures...anything.

Take notes. A pocket-sized notepad and pencil are the most essential tools a member can carry. The information each member acquires, the observations each makes will quickly exceed short-term memory and be lost. To prevent having to rediscover information, take notes. This starts immediately and continues until the file is sealed.

Security

A disaster is a magnet for the curious and the press. Anyone onsite who is not a part of a solution (CFR, investigative personnel, police) is a hindrance, possibly at risk to their safety and yours. The same applies to later locations for exhibits and proceedings: hangar, warehouse, laboratory, boardroom.

When you take charge of a site, brief security personnel who (by name, affiliation or capacity) may be admitted. Have them establish a perimeter encompassing the wreckage and ground scars. It is sometimes expedient to control an area by blocking an entrance or access road.

Most people are deferential to uniformed personnel and will respect roadblocks and boundary tape. Offenders are likely to be underemployed military personnel and the press. Security personnel will take your lead as briefed, until exception becomes the rule. Back them up. Your personal intervention will occasionally be needed: tactfully, but firmly, dissuade visitors regardless of rank or station in life.

Since military personnel may not exercise police authority off a federal reservation, be prepared to engage local police or sheriff's deputies for security off-base.

If the aircraft is located on private property, cultivate the owner's cooperation. It pays to be nice to the landowner.

Off-base, be mindful of the recovery's nuisance to these folks and their neighbors. Bring in a portable toilet. Don't litter, trample crops or bother livestock.

If someone asks about restitution for damages, refer the requestor to the military representative (by name & phone number) handling such claims. Diplomacy works. A "not-my-job" response alienates.

Communication

The Senior Member is the focal point for communication concerning the investigation's progress and the only conduit for external release of information, unless he approves otherwise.

Transfer the safety reporting load from the SDO/ODO (squadron) to the AMB as soon as possible. Until you establish a boardroom which will remain manned during working hours, use the squadron safety office to receive incoming calls, passing on only those the AMB proper must handle.

Not every inquiry merits an immediate or personal reply. It is sufficient to inform the appointing authority and the reporting custodian of your investigation's progress (unprivileged, factual information) and needs for assistance. The rest can read the amended MDRs you issue.

Various agencies or people you contact for support will need selected information to facilitate the jobs you want them to do. For example, a backhoe operator needs to know where to take his equipment, what he's digging for and whether things might go BOOM, but not much more.

The board might discover a hazard which poses an imminent threat to flight operations, requiring notification to the effected aircraft community well before the SIR is done. OPNAVINST 3750.6_ describes how to report such an urgent hazard with sufficient information to describe the hazard, but with

mishap information removed. Otherwise, save your findings, conclusions and recommendations for the SIR.

There might be concurrent JAGMan investigation and Field Naval Aviator Evaluation Board dealing with the event from the same body of real evidence, same witnesses and technical resources. It will be necessary to communicate with those heading other boards/panels to arrange their access to real evidence. Unless criminal activity is known or suspected, the safety investigation will have precedence. But the AMB must make provision not to spoil evidence and to afford the others necessary access to crash site, wreckage, documentary evidence (logs, records, ATC tapes), and a list of AMB witnesses. This does not extend to AMB work product such as privileged statements, transcripts or tapes of interviews.

Press

A Senior Member is not a press spokesman.

A PAO (usually at station, Naval district or controlling custodian) will represent the Navy or Marine Corps to the press. He can get by with a small bag of unprivileged, unvarnished facts: Who (unit, NOT individuals), What, Where, When.

The PAO might approach you for this information when he cannot find it elsewhere in quick order. If you have reliable information, provide the following: aircraft model, mission, number of crew/passengers, damage and casualties. If the aircraft had no ordnance, saying so will allay concern. Make no attempt to explain Why or How; these are yet unknown, difficult to determine, and under investigation. A PAO should not ask these, nor should you offer.

Explaining privilege (through PAO to press to public) is too hard and too easily garbled. Don't.

The PAO should emphasize (1) an investigation is underway, and (2) it is a painstaking process which might take weeks to complete.

If a reporter succeeds in approaching an AMB member directly, the member should refer the reporter to a PAO prepared to handle the press.

Remember: Nothing is 'off the record.'

Leadership by example

The Senior Member sets the tone for the AMB. If he applies himself diligently, the Board will follow that example. If he allows himself to be distracted by his 'real job,' board members will do the same.

Personnel on the periphery look to the board for guidance and example. They presume you know what you're doing. If a Board member handles evidence roughly or fails to take precautions for hazards, sailors on the work detail will emulate.

Buzz and rumor accompany a sensational event. The Board should not by its conduct add to such activity, nor spend time chasing or refuting others' speculations. Discrete treatment of witness contributions is essential: abuse discredits a Board and will dissuade other witnesses from answering candidly. Ultimately, the cooperation and trust a Board obtains depend on its conduct.

The Board, its accompaniment and their activities are the focus of considerable interest and attention. Be on your best behavior.

Meetings

Meet in a location which is mutually convenient, but affords privacy. Convene frequently but briefly in the early going; 30 to 60 minutes per session are sufficient. Until the investigation is well advanced, most of

the information you seek will be outside the boardroom; what little is known will be insufficient to support deliberation.

Pool information so all members are oriented: have each member present information he/she has found since the last meeting and estimate time to conclude unfinished tasks. Note progress made and difficulties needing your intervention. Close off finished business and make record of findings to avoid later having to duplicate the effort. Assess which topics need further development, possibly additional personnel. Reassign tasks as necessary and adjourn to permit board members to go about their respective assignments.

Even with a full board, you might feel manpower-limited. Delegate and work in parallel. Cover more territory simultaneously by tasking members according to their topical expertise and availability. The investigation and report go more quickly with five heads working at full capacity.

Support

Get the support you want. If a task requires a professional or specialty equipment, the Board need not make do with amateurs and inadequate tools. Assess the risk of injury to personnel or damage to evidence before settling for less.

Make the system work for you. The chain of command and aviation community want you to find mishap cause and are willing to help. They can not read minds. Make your needs known to people who can deliver assistance.

Most materials and services are available with a well-placed phone call (work details, transportation, box lunches); some might require a message or letter (full-blown salvage).

If hurdles or administrative requirements become unduly burdensome or impede the AMB, find a responsive ear higher in the chain. The appointing authority (controlling custodian/type commander) is a default resort. The rationale begins, "You gave me the job. Here's what it takes to do it," or tactful words to that effect.

If you know what you want but do not know a source, others might. Investigators from Naval Safety Center have probably encountered a like problem and know who can help. The controlling custodian or type commander can provide organic assets and will carry requests for others to the fleet commander or CNO as appropriate.

Think before you obligate. Appointment to an AMB usually comes without spending authority. Even so, you can get what is needed or helpful by doing one of three things: (1) find a federal source which has it and will provide it, (2) find someone who can spend for it, or (3) find someone to do either of the former while you attend to other matters. It might be possible to obtain limited spending authority in your own right; if not, request a supply officer be detailed to arrange services and materials.

Reasonable expenditures are justified to discover mishap cause and prevent another such loss.

Don't take 'no' for an answer unless you are convinced 'no' is the answer. Persist long enough to determine whether denial is based on incapacity, lack of authority, or unfamiliarity with what you want. The answer might change if you direct your question to someone with greater authority, knowledge or initiative. The answer might change if you rephrase the request to make method or incremental steps evident.

Technical assistance. Needs vary with mishap circumstances. Every mishap raises questions or issues for which a board's aggregate knowledge is not enough.

Busy hands are happy hands, but happy hands can work mischief on perishable evidence. If you (collectively) do not know how to do something you are about to attempt, or how to interpret what you find when you have done it--- STOP. Get knowledgeable help. Refer to the section on technical assistance for detail and resources.

Ask early, before evidence is disturbed, perhaps beyond reconstruction. It will take time to muster travelers to the site. Technical consultants will want to see evidence as-found, if possible. Bridle your curiosity to open or test components unless you have competent personnel on hand to do so.

Regardless of civilian or government employment, a technician or engineer assisting a board is not a member and may not have access to privileged information. His work product will not be protected by privilege. An engineering investigation (EI) report is an authoritative source of factual information, accessible to safety, administrative or legal proceedings, and to public inquiry. Consequently an EI report must not contain information which violates privilege; the best assurance this will not happen is to avoid sharing it in the first place.

Use technical assistants appropriately, but observe the limits of their expertise or qualification. It is inappropriate and of little use to question the airframe maker's representative on the inner workings of an engine, or vice versa.

Food Chain. Many people who respond to a mishap investigation come from a command or corporation which designed, built, supplied, maintained, overhauled, scheduled or operated the aircraft. Consequently, they could have vested interest in the evidence and the investigation's outcome.

Avoid the appearance of impropriety in evidence access, handling or custody. Letting the dog guard the hamburger invites second-guessing. No contractor or corporate representative should have unescorted access to the mishap exhibits. For example, a manufacturer representative on a crash site or admitted to a wreckage layout should travel in company of a board member or a technician/engineer from the cognizant field activity, competent on the system of interest.

Technical assistants are not permitted access to privileged information. This does not mean you must stay in another hotel, travel separately or sit apart at dinner. It simply means: Be discrete. The content of the board's privileged interviews may not be shared, wholesale or piecemeal; the board's speculations on cause should not be aired beyond its membership.

Water and Oats

Take care of your horse: you will ride the same tomorrow.

Just like horses, people need water and food. And protective clothing, transportation, lodging and rest. Stinginess is demoralizing, and counterproductive.

People want information and need guidance: tell them what to look for, what to avoid, how to conduct themselves.

Invite their input. You do not have a corner on solving the mystery. You will not see everything; you might not recognize what you see. Anyone who works on an aircraft has eyes and some area of expertise which exceeds members' general knowledge. Expand the Board's grasp by inviting the working party to look for distinctive signatures or unusual damage on the wreckage while working at the site or layout.

Quit while you're ahead. Do not work a crash site without light. Doing so increases risk of personnel injury and evidence loss. Post security and retire from the site before sunset to allow all to find their way back to familiar surroundings before dark. If daytime high temperature compels working in the zone from sunset to dawn, thoroughly assess the site and wreckage by daylight to determine who can do what by artificial light. Stage generators well clear to reduce impediment to people and machinery moving about the wreckage, and to reduce nuisance noise and fire hazard. Obtain abundant mobile lighting before commencing operations by dark; move it as needed to aid work.

Away from Home

On base, crash/fire/rescue and medical squads respond to evacuate survivors and suppress fire. Security responds to cordon the aircraft and restrict bystanders' access. Off base, the civilian equivalents of each will arrive first (proximity) and probably have jurisdiction. Military units will roll to assist and possibly

relieve. A municipal fire department will do its best with available equipment, but is unlikely to be acquainted with a military aircraft.

Contact local police or the security force from the nearest military installation to request they stand guard pending arrival of the aircraft mishap board to take charge. Ask that they not disturb wreckage or ground scars, but locate and flag far-flung debris and photograph extensively. Request they locate eyewitnesses and make a list of names.

A local liaison can alleviate unfamiliarity with other-service or civilian organizations whose assistance might be needed. Anticipate requirements for work details, lift, transport or storage, and request the liaison start finding sources to diminish response times when you later need them.

Do not count on transportation...unless you have the keys in your pocket. The more inaccessible the site---the higher the likelihood of being stranded. Take food, water and clothing sufficient to RON and to endure unexpected precipitation. Have communication from the site to base or some other command post (sheriff, police, fire, ambulance). Consider external communication support (Hammer Ace) if local assets cannot meet your needs.

There will be meetings, possibly twice daily; you might in some cases establish a command post off-site. Military installations can find and provide rooms and assign phones. If the mishap site is remote from a base, the Board and accompaniment will probably be in commercial lodging; adjacent rooms make musters and passing the word easier. Obtain a meeting room in the hotel where most are quartered. An alternative is to arrange for yourself and for the working party's supervisor rooms (suites) which will hold 6-12 for daily meetings each will want to hold.

TECHNICAL ASSISTANCE

The nature of mishap investigation is such that a Board will inquire at length into subjects which are covered only lightly in familiar resources like NATOPS and O-level maintenance publications. Some inquiries will lead beyond O- and I-level disassembly or testing capability. Impact can so completely disorganize an aircraft that pieces are difficult to identify. Overlaying signatures of impact damage and post-crash fire can confound laymen's efforts to determine objects' condition *before* impact and fire.

Expediency and curiosity will tempt the Board and hangers-on to dive in and learn while doing. There is jeopardy to personnel and evidence in doing so. If you (or accompaniment) do not know how to do something you are about to attempt, or how to interpret what you find when you have done it---**Stop**. Get help. Call a pro with knowledge, the right tools and experience.

Who You Gonna Call?

The resources immediately at hand are squadron and intermediate maintenance personnel, their tools and pubs; these work when the aircraft will yield to wrench-and-screwdriver disassembly. Base civil engineering and CFR personnel can provide brute force assistance (equipment for lifting, digging and cutting). All the former have their place and their limits.

If component removal is the objective, you can proceed in most cases. If detailed disassembly is (or might later become) your aim for selected components, inquire further. Ask pointedly of the work detail, "Are you equipped for and capable of this operation? Can you interpret what you will see inside?" Anything less than full assurance is reason to delay long enough to task-organize, or to defer the operation to another time and place (layout, EI).

Some might offer "I dunno" to your inquiries. Press for referral to someone who might know or can find out. Answers and assistance are out there; sometimes the hard part is finding a source.

The first resort is talent on the government payroll. There is abundant engineering and technical expertise within Naval Air Systems Command and its subordinate commands. Contact the cognizant engineering activity for the aircraft or component of interest. Unit maintenance departments routinely have contact with personnel at Naval Aviation Depots; you will deal with the same for support. NAESU/NATEC representatives and resident manufacturers' technical representatives have such contacts. The controlling custodian's aviation logistics section is another which is well connected and can steer you rightly.

The resource for the airframe might be different than for the engine, other systems or operational issues. Flight performance questions can be entertained by the Test Directorate at Patuxent River. Weapons systems and ordnance will likely fall to China Lake or Indian Head. Appendices to OPNAVINSTs 3750.6_ and 4790.2_ list others for ALSS, NVG, tires, etc.

Beyond naval aviation's support establishment, other federal agencies have specialized knowledge or capability for research and analysis. Contact Naval Safety Center for guidance to and coordination with such external agencies.

Manufacturers' representatives are a second resort. Companies are interested in their products' performance, and most are willing to send knowledgeable help to the mishap, layout or EI location. Such assistance is usually covered under a continuing-support contract with NAVAIRSYSCOM, but should be cleared through the cognizant class desk or program manager for the aircraft or component involved.

In every instance, ask EARLY...before evidence is disturbed, perhaps beyond reconstruction. The technical resources you consult will want to see the evidence in as-found condition or something very

close to it. You do no one a favor to dismantle an item, submit the loose pieces in a shoebox, and inquire, "Can *you* figure this out?"

Use technical assistants appropriately: observe the limits of their expertise or qualification. It is inappropriate to question the airframe maker's representative on the workings of an engine his company did not design or build. An engineer whose expertise is hydraulic actuators will probably be unprepared for questions on avionics, ejection seat, other things outside his realm.

Propriety

Regardless of civilian or government employment, a technician or engineer assisting a safety investigation board is not a member and may not have access to privileged information. His work product (report) is not protected against disclosure; consequently, it must not contain privileged information. The best assurance this will not happen is to avoid sharing it.

Avoid the appearance of impropriety in evidence access, handling or custody. No contractor or manufacturer representative should have unescorted access to mishap exhibits. Have such personnel accompany a board member or an engineer from the cognizant field activity, competent on the system of interest. Do not leave such guests to putter alone among wreckage or exhibits while the AMB is elsewhere.

Assistants of every stripe are present for <u>your</u> aid, not you for theirs. You may tell them to hold offsite until you need them or can supervise them. When you assess there is no further need for their presence, you may send them home.

Food Chain

Many people who arrive to assist a mishap investigation are also part of the string of commands and corporations which designed, built, supplied, maintained, overhauled, scheduled or operated the aircraft. Consequently, they could have interest in the evidence and the investigation's outcome.

This does not mean you must stay in another hotel, travel separately or sit apart at dinner. It means: Be Discrete. The content of the Board's privileged interviews may not be shared, wholesale or piecemeal; the Board's speculations on cause should not be aired beyond its membership. Simply confine discussion to facts and sterile hypotheses when any within hearing are not admitted past the veil.

Remains, Autopsy, Toxicology

What follows is explained in greater detail in the Flight Surgeon's Pocket Guide for Aircraft Mishap Investigation, since they are matters for the medical member. They are generalized here because they bear on Board proceedings and might require your attention when military and civilian jurisdictions cross or generate confusion.

Custody of decedent's remains often rests with local law enforcement or affiliated medical authority, more so when the mishap occurs off-base. Custody and procedure vary from state to state. Although procedure in the vicinity of home base should be known to your flight surgeon, mishaps away might cause confusion.

In some jurisdictions, law might require autopsy for a death other than by natural cause; in others, an apparently accidental death might require only a police or coroner's determination the occurrence was accidental. Some jurisdictions employ a medical examiner (physician, pathologist); some have a lay coroner.

If the case falls outside federal jurisdiction, the Board's medical member should make contact with the local medical examiner or coroner to offer military handling of the remains and use of a military facility; the

local authority may decline the offer, or may waive his jurisdiction in favor of federal authority. If local authority retains jurisdiction, have the medical member request attendance at autopsy and distribution on the report. If there are multiple fatalities, or condition of remains portends a difficult case, request attendance of a pathologist or path team from AFIP.

For proceedings under civilian jurisdiction, have the medical member determine the extent to which the medical examiner will obtain samples, conduct toxicological tests, obtain Xray, conduct dental examination or other wanted examinations. If the procedure under state law is less extensive than desired for the purposes of the SIR, Flight Surgeon's Report, or JAG Manual investigator's report, have the medical member request sufficient specimens be obtained or procedures performed to permit supplementary examination by AFIP. This is not a deficiency in civilian proceedings: their focus is law enforcement (criminal investigation). A crime has not been committed, or you would not be in session.

NAVAL SAFETY CENTER

The Naval Safety Center is tasked by CNO in OPNAVINST 3750.6_ to investigate Navy and Marine Corps aircraft incidents and mishaps. The Center has a division of trained, experienced mishap investigators who travel to assist investigations of most Navy and Marine Corps Class Alfa mishaps.

The Center's flight operations, maintenance and aeromedical analysts are Navy and Marine Corps members with recent fleet experience. An extensive database of mishap information can be mined by occurrence, model, type or other criteria.

The Naval Safety Center can assist in finding resources to accomplish data recovery and analysis. The process requires time-sequenced data (radar, DSU, DFIR, mission/navigation computers).

Data retrieved from recording devices is factual information when presented without alteration in tabular or graph format. Reconstruction and simulation might involve subjective manipulation and data smoothing, resulting in a privileged product. In other words, the AMB may share with the JAGMan investigator the raw content of any recording device successfully downloaded, but might have to protect a RAPS production as privileged.

In hard cases for which you cannot find a source, ask the Aircraft Mishap Investigation division at Naval Safety Center; investigators have probably encountered a like problem and know a resource. Examples are: Armed Forces Institute of Pathology, USAF 84th Radar Evaluation Squadron, Naval Research Laboratory, Federal Bureau of Investigation, Federal Aviation Administration and National Transportation Safety Board. More are accessible.

FLEET READINESS CENTER

As mentioned above, the NADEPs/FRCs are a resource for technical support. A NADEPs/FRCs usually is synonymous with cognizant field (or engineering) activity (CFA or CEA), meaning it has the highest level repair capability within the Naval support structure or has engineering oversight for support contracted to other services and civilian repair facilities. NADEPs/FRCs capabilities usually include detailed disassembly, reconditioning, overhaul, and functional test; consequently its personnel are familiar with components' materials, maintenance and manufacture. Material analysis capabilities are extensive: staff metallurgists and chemists are equipped to perform analyses down to molecular level.

The issue of NADEPs/FRCs support usually comes up twice: early in the field investigation and toward the end of layout. In the first instance, NADEP/FRC personnel can help identify parts and determine whether they merit further examination or that their condition is unremarkable except for damage explained by impact or post-crash fire. In the second instance, NADEP/FRC personnel can accomplish detailed test, measurement or examination of selected exhibits the AMB presents. When the NADEP/FRC sends

personnel to the field, one will be designated lead engineer and provide a report of the summary observations or determinations made on the wreckage.

An engineering investigation is tightly focused on objects the AMB submits for examination, not the whole aircraft. Depending on which activities have cognizance, various parts might go to separate destinations, resulting in as many EI reports.

Not everything merits engineering investigation. An article known or suspected to have malfunctioned or failed warrants investigation if the question--Why?---has not already been answered. The rationale for others should be: pointed question(s) the Board expects are answerable by an exhibit's examination, *and* examination is not possible with local resources. No questions, no fishing expedition. The AMB's charter to determine mishap cause may not be passed to another as random EIs in hopes *something* will appear.

When multiple EI exhibits are inducted at a NADEP/FRC, a lead engineer will parcel them out to engineers and technicians in appropriate divisions for test (condition permitting) or detailed disassembly. Work on the lot usually proceeds concurrently. The lead engineer writes the report section representing his work and collates subsidiary reports by others. Some components' examination might take place at another service's depot, a manufacturer's plant or an authorized repair station. When components are redistributed in this fashion, the cognizant NADEP/FRC engineer attends to oversee the process and to record its findings; the EI report will be written by Navy Department personnel.

An engineering investigation report is an authoritative source of factual information, accessible to safety, administrative or legal proceedings and to public inquiry. An engineer is limited to what can be determined with confidence from the material exhibits, component history cards and maintenance record--hard evidence.

In the absence of a solid determination among your exhibits (it happens), you might be frustrated that you cannot elicit an engineer's speculation. As scientist, he is bound to rely on hard evidence, which might be too limited or obscured by damage. You might be tempted to sweeten the pot by offering information you can substantiate only from privileged sources. Don't.

It remains the AMB's job to determine mishap cause by synthesizing an explanation from a combination of the real and the privileged evidence.

Federal Aviation Administration

If the aircraft could have been visible to radar, FAA is a potential source of that information regardless of filing, flight rules or squawk. NAVAID status and area weather are also available. If the crew attempted contact or was handled by FAA, additional information is possible: taped radio/telephone communication, pilot reports, and more.

Make <u>timely</u> requests through the military liaison at FAA regional headquarters. Unless reserved for inquiry, recording media are recycled after 15 days; temporary notes (weather, aircraft routing slips, PIREPs) might be discarded on expiration unless the handling facility has prompt notice that the aircraft was involved in a mishap. FAA personnel may provide witness statements and interviews, although there is considerable formality to such requests. Use the military liaison (NAVREP).

At any point the Board entertains FAA functions, services or personnel might be a factor in the mishap, proceed as described in the section on FAA and NTSB participation.

Escape Systems, Flight Equipment, Survival Equipment

No single activity has cognizance or comprehensive technical knowledge of all Aviation Life Support Systems. Because of interaction among installed restraint or escape systems and equipment airmen wear, a multidisciplinary Mishap Investigation Support Team is available to provide technical support on-site.

MIST should be requested for mishaps involving major injury or fatality, or when inadequate performance of ALSS is known or suspected. MIST may be requested through the attending Naval Safety Center investigator or directly from NAVAIRSYSCOM.

A MIST coordinator will head a field team from various activities which support the installed escape system, cartridge-actuated devices, parachute or flight equipment for the involved aircraft.

Escape systems and survival equipment are intended for one-time use. Even for a successful egress or survival situation (no apparent equipment problem), recovered ALSS equipment should be shipped to NAWCAD Patuxent River for examination and disposal. An EI will not be conducted nor a report written for equipment shipped for disposal. If the equipment's function is in question, request the EI to obtain a report.

SALVAGE

This section discusses salvage, the retrieval of submerged wreckage. It lists elements of information others need to lend support to a salvage request, and the contributions a Board should make if salvage is approved. The focus is on *how to obtain it.*

Search refers to finding the wreckage. There must be a successful search before there can be salvage. Wind, current, bottom conditions, impact angle, velocity, or aircraft fragmentation can complicate a search.

Location, accessibility and water depth determine what will be required for salvage and who can do it. Most operations require task-organization.

Why Salvage Wreckage?

The above discussion presumes salvage has merit and is approved. There are instances where, despite the absence of wreckage, enough is known from other evidence to form a high-confidence conclusion on cause(s) and to forego salvage. Examples of such evidence are crew/eyewitness statements, radar data, taped communications, deployed flight incident recorder, facility conditions (defective catapult, NAVAID interruption during approach, fuel sample from delivery point) and documentary evidence (personnel, aircraft).

Search and salvage are not cheap and are not without risk to personnel and equipment. Whether salvops are undertaken starts with the AMB. A perfunctory request, without a persuasive case that the aircraft (or selected portion) is essential to discover cause, could be denied. The Board must sift *all available* evidence and decide whether it has sufficient to explain the mishap or needs more. Finally, will the wreckage likely have answers to the questions the Board has not resolved? If yes, continue.

Request

The Senior Member's channel for salvage assistance is uphill to the aircraft controlling custodian (for Marines: type commander)---the same appointing authority for his current task. The request, justification and amplifying information may be transmitted in an amended mishap data report. Paragraph 7 of the MDR is the vehicle for requesting assistance.

The following four questions are the exclusive basis for justifying salvage as stated in ALNAV 020/98 (SECNAV 161750Z MAR 98: DON Salvage Policy):

*is wreckage necessary to determine cause?
*is wreckage a hazard to navigation?
*is an item of national security interest at risk?
*is there an environmental concern?

Reasonable effort will be made to recover crew/passenger remains incidental to salvage, but the basis for salvage is not recovery of remains.
Factors considered by others before mounting a salvage operation follow. Since an AMB opens the discussion by its request and is closest to sources of the information, be prepared to address these:

*wreckage position (pinger, sightings, floating debris)
*site conditions/accessibility (depth, bottom topography)
*aircraft's entry aspect (incident speed/angle, breakup Y/N)
*water temperature/date of immersion (bears on corrosion)
*equipment/ordnance requiring special handling
*remains presumed to be in aircraft

Since aviation units lack the equipment or personnel trained to accomplish water recovery, the AMB will be asking for assistance outside the familiar realm. The AMB must vouch the merit of a salvage. Others responding to the request will attempt to determine: difficulty, likelihood of success, assets available/required, expense, funding sources.

The controlling custodian weighs merit and expense, but probably lacks recovery assets. If he concurs, he will forward the request to the fleet commander.

The fleet commander consults his appropriate type commander (surface) with expertise to determine whether the mission can be done, how, with what difficulty, and whether organic assets are available. When fleet assets are insufficient, but the salvage is supported, the fleet commander may forward the request to CNO.

CNO can task NAVSEASYSCOM (00C/Supervisor of Salvage and Diving). SUPSALV has assets which it can deploy on Navy or merchant vessels, can contract commercial salvors, and will oversee the completion of any salvage in which it has involvement (NAVSEA assets or contracted assets).

Salvage Approved

Your request is approved. Do not presume the wreckage will be delivered to your hangar door. Count on participating in the salvage.

What had been discussion of the hypothetical now becomes planning for an operation. The message which notifies all of approval is also a tasker to the command(s) which will take it for action. You will have collected a list of names, numbers, PLADs and office codes in the course of requesting and rationalizing the salvop. All the preceding are your new pen-pals. Some will become shipmates. Keep them informed. Coordination is essential to preparing for salvage and the ultimate offload and shipment of recovered wreckage.

Planning and operations require knowledge the Board is best suited to provide, directly or by consultation among aviation resources (NADEP systems/structural engineers, airframe/component manufacturers). The safety and maintenance members can handle issues usually raised. One or both should sail on the operation *and* bring appropriate reference materials (manuals, pictures, diagrams, parts lists).

Details to resolve are:

- recovery vessel port location
- arrival of NAVSEA fly-away package (drone) at pierside
- time to fit package to recovery vessel; trials, if any
- probable sailing date
- berthing slots available to AMB, engineers, tech reps
- message release authority for AMB member aboard
- alternate communications (E-mail, INMARSAT phone)
- provision to store/evacuate remains without breaking moor over wreckage
- decontamination/wet storage for components with nonvolatile memory
- ship's crane capacity if handling intact, heavy aircraft
- drawings to show lifting points, equipment location
- offload location for recovered wreckage
- critical parts' description (use nomenclature on the component's label)

On the last item above, think about it. If the aircraft has fragmented, a diver will see many, loose 'black boxes.' A rudder actuator might look like a gear actuator. A TACAN box might not be marked 'TACAN;' its label might be ABC-1234. Be prepared to add color, dimension or other descriptors to help divers working on the bottom to discriminate trash from treasure, plot the wreckage and fetch the prize you want.

If divers are to use aviation-peculiar parts (lift fittings or straps) or tools (specialty fastners, torque busters), make them available in time to hold school on their proper installation or use---before sailing. If

the port has an airfield nearby, divers will benefit from a brief familiarization with a static aircraft---you can show them what parts of high interest look like, where they are located, hazards to avoid, etc.

The Board ashore or its representative afloat will be asked again and again how much of the aircraft is needed for the investigation. Until there has been a significant development, the answer is the same as originally requested and approved: *all* of it. In most cases, the reason for undertaking salvage is the need for as much wreckage (evidence) as can be found.

In exceptional circumstances, investigators might have clues which allow a focus on select components (an engine, a transmission, a fire location). When that is possible, the Board should build a prioritized list of items it wants and another of items it considers little use for investigation. This is high-stakes poker. If hypothesis A does not pan out when the A-list is examined, it might be hard to develop an alternate hypothesis with parts on the ocean floor. Return engagements are rare. Be wary of yielding the salvage opportunity.

Underway

The vessel arrives and puts divers or drone in the water to relocate and survey the wreckage.

Having a notion of wreckage distribution will help locate parts which have not yet been found, but which belong in proximity to others whose position is known. Plot (in pencil) the topography and wreckage seen through an underwater camera; refine it as dives continue. At intervals, have the diver or drone operator pan all around, stopping in cardinal directions to show wreckage and bottom contour. The plot might be crude: direction-and-distance are vaguely appreciated through a remote camera. Without a camera, try to do the same by debriefing divers one by one.

Pickup proceeds slowly, at a rate which might exceed the time/money allotted. Inventory parts recovered to know what high-value pieces you have, or have not, recovered.

AMB, NAVSAFECEN, and NAVSEA reps should join the on-scene commander in drafting daily SitReps. The same group should make consecutive assessments of the likelihood of completing salvage when constrained by funding or future commitment of assets. If it appears the operation will exhaust funding or overrun the assets' time, AMB and NAVSAFECEN representatives should inform their commands, who may apply to a controlling custodian for additional funds or to the appropriate commander for further use of an asset. The salvop will otherwise close with wreckage on the bottom.

Before ending an operation, assess whether you have what you need insofar as desired aircraft components.

No later than breaking moor to sail back to port, make plans to receive the wreckage at pierside and pass those plans to a coordinator ashore. The ship's captain knows he can crane the wreck off his deck, onto the pier. His problem will have ended; yours enters a new phase.

Got boxes? Got trucks and forklift? Got hangar space, tools, work details? If the offload port is remote, arrange to travel to it or to bring the wreckage to your location. If NADEP or factory engineers did not accompany the salvage, but are wanted at your layout for component examination, notify them of the place and time you will commence activity ashore.

Beyond layout and external examinations, consider what components might be candidates for engineering investigation. Consider how they will be removed from the wreckage (people and tools), preserved, packaged and freighted to cognizant engineering facilities.

Pingers

The long name is underwater acoustic locator beacon.
Pingers are off-the-shelf items used by civil aviation to mark flight data recorders. In the 1980s, pingers appeared in Navy tactical aircraft to mark submerged wreckage. An enduring truth had been that finding wreckage could take longer than hoisting it.

The current installation in military aircraft is the Dukane model DK100, which activates on water immersion. The DK100 uses a lithium-based battery with 6-year shelf life. Battery life after initiation is ~30 days.

A pinger emits a 37.5 kHz signal. The signal strength is low, and range might be as short as one mile. Not all ships are equipped to receive the signal, but towed equipment is available and easily used.

When considering search, exploiting the 30 days from water immersion is crucial. Search difficulty increases (and salvage prospect diminishes) without the beacon.

NTSB and FAA

This section discusses the potential involvement of two federal agencies outside the Department of Defense: National Transportation Safety Board and Federal Aviation Administration.

The National Transportation Safety Board is an independent agency with statutory authority to investigate air, rail, highway, pipeline and maritime accidents, and to propose corrective action. NTSB's charter in aviation applies to any aircraft accident (major damage or severe injury) in U.S. jurisdiction, but in practice is reserved to civil registry aircraft operating under FARs. Accidents involving only "public use" aircraft (operated by federal/state/local government) are investigated by the respective agencies.

The Federal Aviation Administration, under the Department of Transportation, operates the national airspace system, certificates aircraft and licenses airmen. The FAA has no investigative authority in its own right, but is likely to be involved in military mishaps because it provided services or simply because it had radar coverage of the mishap locale.

An agreement between NTSB and FAA permits NTSB to delegate certain mishaps to the FAA for investigation. NTSB occasionally does so based on its assessment of merit in applying its assets to a case in which there is minimal risk to flyers and passengers in general and commercial aviation. When NTSB has investigative jurisdiction, it is recommended Navy and Marine Corps personnel request appointment of an NTSB Investigator-in-Charge (IIC).

For a mishap involving civil and military aircraft, it is conceivable there could be three concurrent investigations: NTSB, Aircraft Mishap Board and JAG Manual. The NTSB investigation would have precedence over the military safety investigation for access to evidence. Procedure for such an investigation is described in OPNAVINST 3750.16_.

The context described in this section is the more frequent case: a naval aircraft mishap without civil aircraft involvement. The military retains jurisdiction, but other circumstances invoke NTSB and/or FAA attendance with "party" status (defined below).

By law, military authorities must provide for participation by the Secretary of Transportation in a military mishap investigation in which a duty of the Secretary is or might be involved. In practice this can mean FAA attendance at an investigation which inquires into an FAA service or function. The NTSB has an interest when the above duty applies to civil aviation (most do). Participation may be extended to the NTSB whenever military authority considers it could contribute to aviation safety.

In most cases, FAA is simply a *resource* for information. The following is a list of items obtainable from FAA:

*taped communications of:
    airman-to-FSS telephone weather brief and filing
    radio: ATIS, clearance, ground, tower, approach, departure, enroute
    internal/external comm for controllers/supervisors
*transcription of tape (This is labor-intensive. Don't ask unless you listen to it and assess transcription is worthwhile.)
*facility status (runways, taxiways, navaids)
*NOTAMs
*statements by controllers/supervisors on duty during mishap
*weather observations (hourly/special)
*replay radar tape (visual)
*entabulation (radar file on paper) for analysis/simulation.
*depiction of control sector (airspace) boundaries/altitudes

A request for the above information does not require FAA participation. However, if the Board entertains

that an FAA service or function might be among the possible causes, the Senior Member should make appropriate notifications (see below) to initiate FAA participation.

Circumstances in which NTSB or FAA participation might be appropriate are:

*a mishap involving a military aircraft or component equipment with civilian equivalent, or involving an operation applicable in civil aviation.

*a mishap involving an FAA function.

Consider the FAA involved if any of the following apply:

**performance of an FAA employee or designee.

**FAA certification of a civilian crew member.

**FAA design or airworthiness certification.

**navigation or airport facility established, operated or maintained by FAA or another agency for FAA.

**FAA rule, regulation or order applicable to airspace use.

**FAA air traffic service (clearance, instruction, advisory); air-ground or point-to-point message transmission; weather observations and reports; Notices to Airmen; airport advisory and flight service.

**FAA approach control function delegated to a military facility.

**operation under an FAA waiver or exemption.

**FAA regulation and nonmilitary publications.

**FAA standards for obstruction clearance, flight inspection, lighting or markings at airports and along airways.

Participation

The terms "party" and "participation" derive from the NTSB practice of admitting organizations, corporations or agencies to its investigations based on their familiarity or technical competence with some aspect of the involved operations, equipment, facilities or personnel. Neither term is defined in OPNAVINST 3750.6_, which implements Navy and Marine Corps internal investigation and reporting; however, OPNAVINST 3750.16_, mandates this accommodation.

In practice NTSB/FAA participation differs little from the familiar provision for an AMB's use of engineers, technicians or manufacturers' representatives. As in the familiar case, personnel other than those appointed to the investigative board are not included in the board's interviews with witnesses who could self-incriminate, deliberations on privileged information, or creation of the investigation report.

The concept of privileged information is not practiced in NTSB investigations, nor in FAA proceedings; however, when personnel of those agencies are admitted to a military safety investigation, they and their agencies are bound to observe and comply with confidentiality of information obtained under promise of nondisclosure.

In view of the above, NTSB/FAA participation in a mishap investigation under military authority is construed as attendance and active assistance in any portion of the investigation except those in which the investigative board obtains, analyzes or reports privileged information.

Interagency Notification

At the earliest occasion the AMB entertains an FAA function as possible cause, the Senior Member should notify his Type Commander/Controlling Custodian and NAVSAFECEN to accomplish necessary interagency coordination. OPNAVINST 3750.16_ provides further direction and information.

The Naval Safety Center will determine whether NTSB might have interest in the investigation.

The Naval Safety Center will provide the NTSB and the FAA opportunity to participate according to each agency's involvement or interest. The agencies will acknowledge notification, indicate their intentions (decline or participate) and, if appropriate, identify personnel assigned to the investigation.

Not all NTSB and FAA personnel hold security clearances. In a mishap involving classified matters, military authorities must identify an access level so NTSB and FAA headquarters can assign personnel with appropriate clearance. Official notification from the NTSB and the FAA to military authorities of clearances agency personnel hold and presentation of agency credentials will constitute evidence of clearance.

If not previously initiated, subsequent Amended Mishap Data Reports from the AMB should include as INFO addees the NTSB, FAA headquarters and the Naval liaison (NAVREP) in the respective FAA regional office.

The Senior Member of an investigative board with FAA or NTSB participants will supervise and direct their activities during the course of the investigation.

NTSB and FAA representatives can be expected to support the AMB with access to agency personnel for interviews, information, and records. They can be expected to pass to their agencies information which applies to civil aviation.

An FAA participant in a military safety investigation may not take part in an FAA enforcement action in connection with the mishap. This does not preclude the agency taking action on violations of Federal Aviation Regulations: other agency personnel would be appointed to gather evidence for such action.

Privileged documents (witness statements, records of board analysis, conclusions or recommendations) may not be provided to NTSB or FAA participants. Copies of nonprivileged documents used by the military investigation board may be provided to NTSB and FAA participants as the senior member sees fit.

Reports

A mishap safety investigation report may be released only as prescribed by CNO. NTSB OR FAA personnel who assist an AMB are not entitled to a copy of the SIR, nor should the AMB include their agencies as addressees on the SIR.

If during an investigation, the board identifies a hazard which requires immediate action on the part of civil aviation, the Senior Member should expeditiously transmit a hazard report to the Naval Safety Center for passage to the appropriate action agency.

A conclusion in an SIR attributing cause to another agency or recommendation of corrective action by another agency may be released externally only by CNO.

ADJOURNMENT

The release of the report signals the end of formal Board activity, but there is business to clear up before all leave the room and turn out the lights.

In the course of a thorough investigation, a Board will discover hazards which, although valid and deserving attention, did not precipitate damage or injury in the mishap at hand. Deliberation will have eliminated these as causes and consequently there will be no corrective action stated *in the SIR*. There remains a duty to report them. Prepare a hazard report for each in message format. Describe such a hazard without allusion to the mishap and recommend a remedy. Leave draft hazard reports with the safety member for consideration by the reporting custodian and his release.

The Board might not hear or read that its report is acceptable. In keeping with the tradition silence means consent, the Board may adjourn if it has not been directed to reconvene for inadequacy or deficiency in the report within several days after release. It is expedient ask the appointing authority or controlling custodian whether the report is adequate.

Wreckage Release

When you finish handling the wreckage, put pieces into boxes, marked and simply organized (e.g., engine, flight controls, cockpit...) in the event an endorser requests reexamination or further detail. Make it occupy minimum space and leave it securely stored until later released for disposal. Flight equipment worn by a deceased airman is not to be stored with wreckage or released as personal effects, but should be shipped to the cognizant field activity (NAWCAD Patuxent River) for examination and disposal; no EI report will follow, unless the AMB asks for one.

If an investigator from Naval Safety Center attended, COMNAVSAFECEN will release by message its claim on the wreckage and real evidence to the AMB Senior Member.

With agreement from the heads of concurrent investigations that none have further need for the aircraft and real evidence, the Senior Member should release them to the reporting custodian (squadron CO). This puts the aircraft and its records under OPNAVINST 4790.2_ jurisdiction, where maintenance administration can initiate steps to strike the bureau number, dispose of wreckage and retire records, as appropriate.

Ensure your release informs any agency (NADEP, laboratory) holding exhibits of the change in custody. Because all will want to divest of items you sent for examination, this provides notice of changed custody and provides your relief an address list to inform all when disposal authorization is later obtained.

Records

Guidance for disposition of accumulated records and documents is provided in OPNAVINST 3750.6_. At the point the Board yields custody of the wreckage and real evidence, official records in Board hands return to their routine administrative venue. Documents the Board created or acquired during proceedings are retained locally until the closeout endorsement or for a specified time.

The report (message, enclosures) and subsequent endorsements must be retained for two years from the mishap date and then destroyed.

Interim work product. Documents acquired or created by the Board but not used as enclosures should be retained until the final endorsement is issued. This applies to notes, statements, photos diagrams, tapes and the like. If the final endorsement does not direct action requiring the above documents, they should be destroyed. Drafts of the report are obsolescent and should be destroyed.

Aircraft logs and records should be passed with custody of the wreckage to the reporting custodian.

Service, health and training records, and flight logs for missing or deceased personnel should be returned to Administrative or Medical departments for handling in accordance under NAVMILPERS Manual (Navy) or IRAM (USMC).