

**RECIPROCAL COOPERATIVE AGREEMENT FOR STATE OF
CALIFORNIA MILITARY DEPARTMENT**

EXHIBIT F

**CALIFORNIA INTERAGENCY MILITARY HELICOPTER
FIREFIGHTING PROGRAM OPERATING PLAN**

Updated: 01MAY2015

COOPERATING AGENCIES

*CALIFORNIA NATIONAL GUARD
CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION
USDA, FOREST SERVICE, PACIFIC SOUTHWEST REGION
NATIONAL PARK SERVICE, PACIFIC WEST REGION
BUREAU OF LAND MANAGEMENT.*

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1. INTRODUCTION

This Operating Plan implements the agreements documented in the “Cooperative Agreement” among: the California Office of Emergency Services (Cal OES); the California Department of Forestry and Fire Protection (CAL FIRE); US Department of Agriculture Forest Service (USFS); US Department of Interior, Bureau of Land Management (BLM); US Department of Interior, National Park Service (NPS); and the California Military Department (CMD). All agencies that are signatory to the Cooperative Agreement will maintain personnel and equipment capable of responding to an emergency activation during the fire season, in accordance with this plan.

This Operating Plan establishes procedures that CMD aircrews, USFS, BLM, NPS and CAL FIRE personnel will use when activated for wildland firefighting missions. Nothing in this plan supersedes the existing Cooperative Agreement, CMD Emergency Operating Plans, Department of Defense policy, or National Guard service regulations, directives or instructions.

About this document: This document has been revised so that material can be added or deleted to individual sections as determined to be necessary by the cooperating agencies. CALFIRE, as the proponent of the Cooperative Agreement, will maintain the current version of this exhibit and coordinate with signatory agencies (CMD, CALFIRE, Cal OES, BUREAU, US FOREST SERVICE, and NPS) to revise and update this document annually. Each signatory agency will designate an appropriate office or project officer to provide input and update each this Exhibit. The Exhibit update process should occur between November and April of each year. Update exhibits will be published no later than the first of May of each year in accordance with the Cooperative Agreement. As material changes, CALFIRE will distribute new printings of the revised sections to all participants in the program.

2. OBJECTIVES

The CAL FIRE, USFS, NPS, and BLM routinely employ helicopters for fire suppression when fighting wildfires. CMD helicopters are requested by Cal OES to support these agencies in fire suppression operations as authorized per [DoDD 3025.18, “Defense Support to Civilian Authorities”](#), [DoDDI 3025.21, “Defense Support of Civilian Law Enforcement Agencies”](#), JP 3-28, “Civil Support”, National Guard Regulation 500-1/ANGI 10-8101, “National Guard Domestic Operations,” NGB PAM 95-5, “Use of Army National Guard Aircraft”.

This Operating Plan is intended to serve as a single-source document that identifies the mutual duties, responsibilities, and expectations of the various fire agencies, and the CMD when tasked to support wildland firefighting operations. This plan standardizes CMD helicopter firefighting equipment and aircrew qualifications, training, currency and operational requirements. It specifies the process for activation of CMD units, and provides fire managers with detailed information about aircraft capabilities and staffing process. It also prescribes training requirements for both fire agency and CMD

personnel.

This document shall use as a fundamental foundation standard terms, definitions and structures defined in NIMS, CAL FIRE 8300, NIFC Military Use Hand and the Interagency Helicopter Operations Guidance (IHOG). This will ensure that this document is congruent to current ICS systems.

3. OPERATIONS POLICY

CMD aircraft operate under policies and procedures contained in Department of Defense Flight Information Publications and flight rules contained in Army and Air (AKA Components) National Guard and State regulations. Specific paragraphs in Federal Aviation Regulations Part 91, that do not exempt military aircraft or flight crewmembers, apply to flights in the National Airspace System. Other applicable regulations or procedures may be more restrictive but under no circumstances may they be less restrictive. Nothing in this plan, or communicated by other means, authorizes CMD aircrews to violate existing Component rules, regulations, instructions, or guidance. All CMD and wildland fire agency personnel assigned to joint firefighting operations in California will comply with the policies, procedures, and requirements established in this plan.

CMD aircraft and resources will normally be activated after all agency and civilian helicopters, of the type required, are unavailable or at significant draw down levels. CAL FIRE may activate CMD assets if demand signals indicate a significant pending shortage. The CMD helicopter firefighting capability is a supplemental resource employed when suitable civilian contract helicopters are not readily available.

All CMD aircraft when activated are under the operational control of a CMD Aviation Commander as designated by the CMD J3(Operations Officer). All activation, dispatch, re-assignment, diversion, release and deactivation procedures are provided later. All incident assignments will be directed by the responsible Forest Agency.

Out-of-state aircraft, crew and other aviation support personnel may be requested through EMAC or interstate Mutual Aid agreements when all CMD assets of that type have been exhausted. When this occurs, the assets will fall under the command and control of the CMD and are OPCON to a designated C2 element identified by the CMD (i.e., TF Aviation (SAO or a TF Battalion), 129th RQW, other unit). Any assignment of these assets to fire incidents will be jointly coordinated between CAL FIRE and the CMD. Out-of-state National Guard aircrews will complete an aviation JRSOI established by SAO and will include at a minimum a records review CMD and Part I and Part II training as defined in Chapter 15. The CMD retains authority to establish C2 elements/nodes as required based on their assessment and the scope of the incident(s).

4. DESIGNATED COMPONENT NG SUPPORT FACILITIES

- **Los Alamitos Army Aviation Support Facility (AASF #1)**
Joint Forces Training Base
4612 Doolittle Avenue, Building 913
Los Alamitos, CA 90720
562-795-2006
UH-60A/L Blackhawks
- **Stockton Army Aviation Support Facility (AASF #2)**
California National Guard
2000 Stimson Road
Stockton CA 95206-3957
209-983-5319
CH-47D/Fs and UH-72As
- **Sacramento Army Aviation Support Facility (AASF #3)**
10616 Superfortress Avenue
Mather CA 95655
916-843-3925
UH/HH-60A/L Blackhawks
- **Moffett Federal Airfield (Air Guard)**
129th Rescue Wing (RQW)
656 Johnny Luv Lane / M513
Moffett Federal Airfield, CA 94035
650-603-9357
HH60 Pavehawks

5. SUPPORT FACILITY WORKING GROUPS and RELATIONSHIPS

CMD support facilities listed above and CAL FIRE will maintain a constant relationship. CAL FIRE will designate an Agency Facility Military Liaison and an alternate to each facility. Close relationships will be maintained between the Facility Liaison Facility Commander, Maintenance Officer, and Operations Officer. In addition, each support facility will designate a primary equipment and logistic rep to assist in accounting for CAL FIRE property maintained at CMD facilities. These individuals make up a Standing Support Facility Working Group. The following must be completed by these working groups no later than May of each year:

1. The firefighting equipment and aviation life support equipment (ALSE) at each facility is inventoried, inspected, and tagged as ready for deployment.
2. CMD aircrew and fire agency personal are trained to operating plan standards, and that training is properly documented.

3. Communication and coordination between the CMD facility personnel, aircrews and fire agency personnel is maintained.

6. USFS LETTER OF AUTHORIZATION

All CMD and trained and certified out-of-state NG helicopters flying on a state or federal fire incidents shall carry a copy of the current USFS Region 5 authorization letter. CAL FIRE TAO and CMD will review this letter annually and recommend changes to the USFS Region 5 Aviation Manager.

7. FLIGHT RULES AND SAFETY

When activated, the safety of aircraft and crews are the highest priority. All agencies have their own standard operating plans integrating safety and risk assessment. This plan consolidates the standards in those plans into a single, multi-agency Operating Plan for firefighting operations.

A. Incident Aircraft Coordination and Control

1. Airspace Coordination

Aerial firefighting occurs in a very dynamic environment. Firefighting aircraft often work in close proximity to each other, ground personnel, and surrounding terrain. This is routinely accomplished under conditions that are less than ideal as aircrews contend with high temperatures, wind, turbulence, and visibility restrictions caused by smoke and terrain. Furthermore, firefighting aircraft, in contrast to most commercial aviation, must provide their own safe separation. It is for these reasons that AIRSPACE COORDINATION is of the utmost importance with respect to safety. Though the Air Tactical Group Supervisor (ATGS) or Helicopter Coordinator (HLCO), Military Helicopter Coordinator (MLCO) is responsible for overall coordination and tactical employment of aircraft on an incident, it is incumbent upon all aircrew personnel to participate in this endeavor by adhering to the rules set by policy and the instructions given by the ATGS or HLCO.

2. Authority to provide Air Traffic Control and Coordination

The ATGS(Air Attack), HLCO/MLCO are responsible for and have authority to providing air traffic control and coordination at an incident. The ATGS or HLCO will:

- Discontinue flight operation anytime conditions appear unsafe.
- Advise inbound aircraft of known hazards, such as, obstacles, power lines, turbulence, visibility restrictions, etc., and other aircraft on the incident.
- Issue a clearance to each inbound aircraft prior to their arrival. The clearance will include specific routing and altitude when applicable. (*See "Incident Complexity and Span of Control" below.*)
- Establish traffic patterns and control procedures. (*See "Altitudes" and "Flight*

Routes To and From An Incident" below.)

- Ensure that during retardant drop runs, the frequency used to direct the drops remains clear throughout the base, final, and release. Communications during drop runs will be limited to the transmissions between the dropping airtanker and the controlling aircraft.

B. Procedures for Operating in a Fire Traffic Area (FTA). 1. Entering: CMD Aircrew must never enter a Fire Traffic Area without authorization. To enter the FTA, **Pilots shall contact and advise the ATGS/HLCOHLCO or MLCO when :**

- At 12 NAUTICAL MILES from an incident_- stating their distance, direction, and altitude. (Example: "Tanker 100, 12 miles west, 2,500.")

NOTE: Aircraft inbound to an **incident will not proceed closer than 7 NAUTICAL MILES** until CLEARANCE is received from the control aircraft. Separate CLEARANCE must be obtained prior to entering or transitioning through any existing agency TFR. FTAs and TFRs may be two different airspaces. This includes transitioning through or entering any established TFRs when in route to an incident or helibase.

2. Operating In: Pilots shall report to the controlling ATGS/HLCOHLCO/MLCOMLCO

- Report ARRIVAL AT SCENE of a fire and provide fuel endurance.
- When lifting off/landing within the Fire Traffic Area (FTA).
- When moving between operating/target areas.
- When departing or re-entering an incident area
- When changing radio frequencies.
- When encountering any unusual or unsafe situations.
- Prior to performing a non-standard maneuver
- When any incident occurs during tactical operations, i.e., bucket/rotor strike.

Pilots are responsible for maintaining aircraft separation, radio contact and must adhere to correct flight patterns and altitudes. Military pilots may use internal radio communications to de-conflict from one another as long as the radio used is not a primary means of communications with ATGS/HLCO.

C. FTA Altitudes and Aircraft Separations

(1) **Media (PAO) or other aircraft** will operate at altitudes assigned by the ATGS. Generally, this is an altitude above the air tactical aircraft.

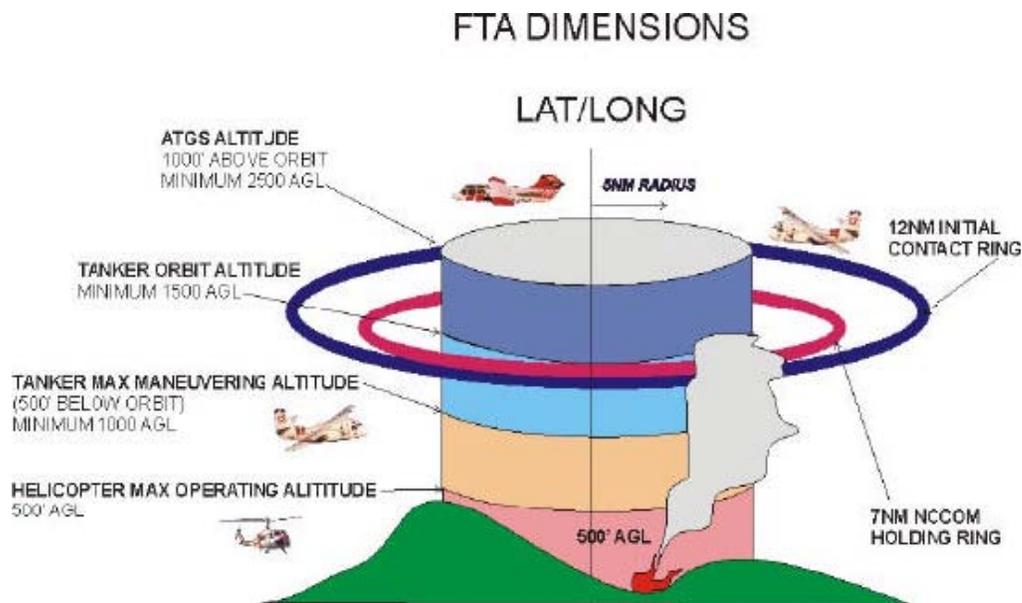
(2) The **ATGS** shall operate in a flight pattern suitable for overall command and control. This will normally consist of a right-hand pattern flown at a minimum of 2,000

feet altitude AGL (minimum 2,500 feet AGL during Complex Incident airspace conditions) and at least 1,000 feet above the airtanker orbit.

(3) **Airtankers** will normally orbit in a left-hand orbit at a minimum of 1,000 feet AGL (minimum 1,500 AGL during Extended Attack fires). Airspeed will determine the size of the orbit. Overtaking aircraft will pass (outside) to the right of the aircraft being overtaken.

(4) Airtanker drop patterns should be planned to avoid any abrupt pull-ups or excessive maneuvering such as turns beyond 30° immediately following the drop. maximum drop maneuvering altitude shall be at least 500 feet BELOW the established orbit altitude. The orbit altitude will be adjusted, if necessary, to accommodate this.

(5) **Helicopters** will generally operate at 500 feet AGL or less in the incident area.



(6) AGL Altitudes:

Aircraft	Minimum Enroute	Minimum Orbit Initial	Minimum Orbit Complex Incident	Minimum Special Maneuvers
ATGS	2,000	2,000	2,500	500
Airtanker	1,000	1,000	1,500	150
Helicopter	1,000	Below 500	Below 500	Below 500

(7) The FTA is defined outward from the lat/long coordinates at the center of the desired controlled airspace.

(8) The typical radius of the FTA is 5 nautical miles, but can be greater if necessary to maintain aircraft safety.

(9) Complex Incident Airspace Rules

Aircraft.....Designated Airspace
Helicopters.....0 to 500 feet AGL.
Airtanker Orbit.....1500 feet AGL minimum (higher as required)
Air Attack.....2500 feet AGL minimum (or 1000 feet above Tanker Orbit)

Lateral Limits

12 nautical mile ring.....Check-in with control aircraft.
Prior to 7 mile ring.....Clearance and Briefing received
Inside the 7-mile ring.....All aircraft at assigned altitude less than 150 knots.

D. Aircraft Arrival Prior to ATGS

When Aircraft Arrive Prior to ATGS/ HLCOHLCO/MLCOMLCO, the following will apply:

(1) Prior to arrival make blind call on appropriate frequencies.

(2) The first aircraft at scene will:

- Orbit the fire at least once to size up the situation and announce aerial hazards.
- Stay alert for the presence of other aircraft over the fire.
- Establish radio contact with ground personnel for instructions, if possible.
- If ground personnel are not yet on the fire, or radio contact cannot be made with ground forces, the pilot or manager will:
- Make a report on conditions to the Emergency Command Center (ECC).
- Develop a plan and communicate with incident aircraft.
- Proceed with the mission to the best of their ability based on their knowledge of aerial firefighting.

(3) Additional aircraft will also attempt to contact ground personnel for instructions. If contact cannot be made, they will wait until the preceding aircraft has completed its

drops and follow the plan that has been communicated to them by the preceding pilot.

(4) For safety reasons, there is to be only one ATGS or HLCO in command at one time, and it is each person's responsibility to be aware of whom this is.

(5) When aircraft are over the fire without a control aircraft or before a ground incident commander arrives, a CAL FIRE helitack captain shall control air traffic until relieved by an ATGS. All pilots must be aware of this decision and will make radio contact with each other before performing any mission.

E. Positive Control Required

(1) The simultaneous operation of any combination of airtankers and helicopters will occur only under the complete traffic control of an ATGS, HLCO and/or MLCO.

(2) The only allowable exception to this policy is for the purpose of quick initial attack on a fire prior to the arrival of an ATGS , HLCO and/or MLCO.

- In this situation, the pilots of a controlled number of aircraft must create their own positive control environment through radio communication and positive position reporting.
- The first aircraft on scene shall confirm with Emergency Command Center (ECC) that an ATGS or coordinator has been assigned and is responding.
- All participating aircraft and pilots will use the same radio frequency, normally the assigned air tactics channel for that incident.
- It is each pilot's responsibility to monitor the activity of the other participating aircraft both visually and through positive radio communications.

F. Incident Complexity and Span of Control

An incident can increase in complexity to where safety, efficiency, and control are diminished. The following actions enable air operations to keep pace with incident growth (next page):

COMPLEX INCIDENT

CONDITION	REQUIREMENT
<p><u>When multiple aircraft are ordered:</u></p>	<ul style="list-style-type: none"> • Entry altitudes assigned to all aircraft • Orbit altitude assigned to all airtankers • Flight routes assessed for conflict • Air Tactics restricted to essential communications
<p><u>When either of the following occurs:</u></p> <ul style="list-style-type: none"> • Reload base is within 10 miles of fire • More than ONE reload base is used 	<ul style="list-style-type: none"> • Routes and altitudes between the airport(s) and incident will be established to avoid conflict.
<p><u>When any of the following occurs:</u></p> <ul style="list-style-type: none"> • Total number of aircraft exceeds 10 • Total number of airtankers exceeds 6 • Total number of helicopters exceeds 6 	<ul style="list-style-type: none"> • Routes and altitudes established for all aircraft • Orbit altitude assigned to all airtankers • 2nd Control Aircraft considered
<p><u>When any of the following repeatedly occurs:</u></p> <ul style="list-style-type: none"> • ATGS not responding to radio calls • Required radio calls are not being made • Acknowledgements are not being given • Positive control is lost in any respect • Air to Air communications is overloaded 	<ul style="list-style-type: none"> • Operation will be slowed or stopped until problem is resolved. • 2nd Control Aircraft WILL be ORDERED
<p><u>When any of the following conditions occur:</u></p> <ul style="list-style-type: none"> • High winds • Moderate or greater turbulence • Heavy smoke and reduced visibility • Suppression actions are ineffective • Targets are difficult and dangerous 	<ul style="list-style-type: none"> • Risk / Benefit assessment required • Suspension of air operations considered for some or all aircraft.

G. Non Standard Maneuvers on an Incident and/or in the FTA

(1) A non-standard maneuver is an action by a pilot (and aircraft) performed in a way other than the normal, usual, or predicted fashion. Non-standard maneuvers are necessary at times when the usual method would be either unsafe or ineffective. It must be understood, however, that a non-standard maneuver may require the suspension of other ongoing operations. Some examples of non-standard maneuvers are:

- A target identification pass by the Air Tactical aircraft
- A tanker drop performed out of a RIGHT turn
- Air Tactical aircraft flying a left hand orbit
- A helicopter flying a new or unassigned route within the incident boundary
- Any aircraft deviating from the assigned or expected altitude

(2) BEFORE A NON-STANDARD MANEUVER IS EXECUTED: Non-standard maneuvers must be REQUESTED (by the pilot intending to perform the maneuver) and APPROVED by the ATGS, ASM or HLCO. Finally, all pilots of aircraft that may be affected by the maneuver must ACKNOWLEDGE that they are aware of the maneuver about to take place. H. Flight Routes To and From an Incident

(3) Routes should be implemented when conditions warrant either temporarily or for longer periods of time. Such conditions may include poor visibility, coupled with numerous aircraft flying to and from multiple incidents in proximity. Longer-term flight routes should be a joint decision by pilots, base managers, and incident air operations personnel. Pilot feedback is critical on this issue. These routes should be communicated to the applicable Region CC for incorporation into the Daily Airspace Coordination/Communications Report.

I. Aviation Incident and Accident Reporting

(1) Should an incident or accident occur, the CMD and the agency controlling the incident are responsible to follow their respective reporting procedures. The CMD will report any incident or accident to their respective AAML or MHEM or Helibase Manager. All accidents and incidents will be reported immediately. CMD has the responsibility to complete and report any aviation accidents and conduct investigations regarding accidents for assets under CMD control. The Forest Agency to which the aircraft is assigned will be involved or may conduct a separate investigation. CMD personnel will provide immediate notification through the CMD chain of command. Aircraft incidents and accidents are defined in applicable Component regulations and in CAL FIRE document *AVIATION ACCIDENT*,

INCIDENT AND HAZARD REPORTING section 8324. CAL FIRE definitions are included below for reference:

Aircraft Accident – an occurrence with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and the time when all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage.

- Fatal Injury – Any injury, which results in death within 30 days of the accident.
- Serious Injury (FAA) – Any injury which: (1) requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received. (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose). (3) causes severe hemorrhages, nerve, muscle, or tendon damage. (4) involves any internal organ, or (5) involves second or third degree burns, or any burns affecting more than 5 percent of the body surface.
- Serious Injury (CAL FIRE) – Serious injuries are those that: (a) require in-patient hospitalization for more than 24 hours for other than medical observation; (b) involve loss of a body part; or (c) involve serious disfigurement.
- Substantial Damage – Damage or failure which adversely affects the structural strength, performance or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Substantial damage DOES NOT INCLUDE engine failure or damage limited to an engine if only one engine fails or is damaged, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades, and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wing tips.

Aircraft Incident – an occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations. Some examples are:

- Airspace Conflict – A near mid-air collision, intrusion, or violation of airspace rules.
- Forced Landing – A landing necessitated by failure of engines, systems, or components, which makes continued flight impossible, and which may or may not result in damage.
- Incident with Potential – An incident that narrowly misses being an accident and in which the circumstances indicate significant potential for substantial damage or serious injury. The Agency Aviation Safety Officer will determine final classification.

- Maintenance Deficiency – An equipment defect or failure which affects the safety of operations, or that causes an interruption to the services being performed.
- Precautionary Landing – A landing necessitated by apparent impending failure of engines, systems, or components, which makes continued flight inadvisable.

(2) Upon arriving at a fire incident it shall be the responsibility of the AAML or the Military Helicopter Manager (MHEM) to ensure that the crash/rescue plan, medevac procedures and notification procedures are in place prior to allowing any CMD aircraft to operate on the fire incident. In the case of dispatch to an Initial Attack (IA) incident the AAML/MHEM must be aware of the risks and plan for safety, advising CMD crews when unsafe situations or activities are occurring. The AAML/MHEM may, at anytime, cease CMD operations when they feel that it is unsafe. It is the responsibility of the AAML/MHEM to initiate all fire agency incident reports and to ensure that all aviation incident and accident reports are accurate.

(3) SAFECOM and FC-119 Reports: CAL FIRE and federal fire agency personnel will complete and submit SAFECOM or FC-119 reports in the same manner as if the reportable incident involved an agency (“exclusive use”) or CWN helicopter.

(4) IAW CMD EPM- CMD personnel will complete a Serious Incident Report (SIR) 190-40 and submit through their chain.

J. Safety Equipment

- (1) CMD crews shall adhere to applicable military regulations governing the wearing, use, and maintenance of aviation life support equipment (ALSE).
- (2) AAML/MHEM shall wear the following clothing and equipment during flight.
 - a. SPH-5 flight helmets with low impedance microphones and CEP's.
 - b. Authorized Nomex flight suit or wildland firefighting Nomex.
 - c. Leather or Nomex gloves.
 - d. Leather boots.
 - e. CMD provided tether, harness, ALSE vest with HEEDS, HEEDS holder and PFDs. Each UH-72 shall deploy with one David Clark headset for potential RECON flights.
 - f. CMD will provide MHEM with NVGs and helmet during MEDEVAC. For each mission.
 - g. CAL FIRE shall provide one Fire Shelter per Crew Member.
- (3) All crewmembers shall be required to wear approved Personal Flotation Devices (PFD – Army) or Life Preserver Unit (LPU – Air) and should have HEEDS bottles during over water bucket and hovering operations. Non-crewmember military passengers at a minimum will have a PFD/LPU provided by their component. *Facility AAMLs are responsible to ensure that fire agency-supplied PFDs are sent to the CAL FIRE ALSE technician at McClellan annually for inspection and*

certification.

K. Crew Endurance

(1) National Guard personnel assigned and at an incident will have a maximum duty day of 14-hours and a minimum rest period of 10 hours. Other activated personnel will fall under CMD rest policy. CMD and CAL FIRE will organize logistics and transportation to maximize aircrew availability for mission support. Note: This document is an operational guideline. Nothing in this section shall supersede or violate Army Regulations or Air Force Instructions governing crew duty and crew requirements.

(a) Within any 24-hour period, crewmembers shall have a minimum of 10 consecutive hours off with 9 uninterrupted hours in their hotel room. *Duty starts when a crew leaves the hotel room and shall end no more than 14-hours later. It is the responsibility of the flight crew to ensure they get rested in order to safely fly and complete the mission. PICs and MHEMs will plan and agree on crew duty day times based on logistics, transportation and other factors. Determinations must be made at the start of the day for that day and planning for the next day operations and communicated to the AOBD and Helibase manager. Information communicated to the AOBD and Helibase manager by the MHEM are: travel times, meal times, briefing times, crew availability times, cutoff/ship down times and depart base times. MFLs will assist in the planning process.

*Duty start time may be changed if agreed upon by the PIC, MHEM and the Aviation Commander. This is to allow for special circumstances and situations that cannot be captured within the scope of this agreement.

(b) The first Duty Day starts at the time the Service Member (SM) receives orders from the National Guard to start duty. These orders may instruct the Soldier / Airman to start a Crew Rest cycle to ensure that the SM is available for the next full Duty Day. Crew Rest may occur at home or at some other location, as designated by the CMD. CMD is responsible for logistics for this period. SM are authorized Pay status when a Cal OES order / Activation number has been issued. Pay status ends once released from activation. CAL FIRE is not responsible for costs for travel of a CMD member from their HOR to duty station, but will reimburse CMD travel costs connected with transportation between duty location and incident.

(2) Flight crews may be assigned on fire fighting duties for up to 7 consecutive days, including travel, but will not normally work more than 6 consecutive days without 1 day off. However, when helicopter / crew availability is critically low, flight crews may be assigned to work up to 12 consecutive days with approval from respective

agencies. If a crew member works 7 or more consecutive days, he/she must receive 2 days off within the 14 day period. Days off need not be consecutive. Once relief crews arrive at the incident, out-going flight crews may return to their home facility or other duty location as directed by CMD leadership. If flight crews are extended up to 12 consecutive days without relief, crewmembers shall have the next 2 days off at the incident away from their home facility. However, if the crew members chose to return home they will be released from the incident and from pay status. At no cost to CAL FIRE, CMD may keep a Service Member in a ESAD paid status when days off a activation occur during a SM normally scheduled workday for civilian or military employment and the intent is return the member back to fire duty.

(3) Flight crews are limited to seven hours of flight time in one duty day.

(4) Pilots or crew members accumulating 36 or more hours of flight time in any 6 preceding days shall be off duty the following full day.

(5) A reset day or day off must not be less than 24 hours and the pilot or crew member shall not be subject to call-up for duty during this period. CAL FIRE will provide lodging and food when needed for any personnel remaining at an incident on a paid status during a rest period.

(6) Non-flying personnel duty days are 14 hours of duty, 10 hours rest, and 8 hours room to room. With the approval of all agencies, they may work up to 14 consecutive days with two paid days off occurring after the 14 day work period. Rest days and days off policy is same as above for aircrews. The duty hours of maintenance personnel may be adjusted to facilitate maintenance during non flying hours.

(7) The Crew change models are planned for a 7-day cycle and executed for minimal impact to CAL FIRE crew availability. CMD should plan crew swaps to be in place the last half of the day on the 6th day. The AAML, after coordination with the AOBDD determines when swaps will take place. The crew swaps must be carefully coordinated by the Agency Aviation Military Liaison (AAML), Aviation Task Force Commander (ATFC), Military Field Liaison (MFL), and the Officer-In-Charge (OIC) to provide a seamless operation. A crew rotation plan should be developed by the AAML, MFL, and the OIC soon after the arrival of CMD helicopters. CMD will plan for the most cost effective crew swap alternatives. Unless authorized by TAO for reimbursement, out-of-cycle swaps flight hours are at the expense of the CMD. Note: Charged flights for crew swaps will be on a Form A. .

(8) MEDEVAC aircrews follow service component standards for crew duty and rest cycles. The PIC and MHEM shall ensure crew has adequate rest at all times in order to ensure readiness when called upon. CMD will resource aircraft and crews to provide 24/7 D/NG responses. See Para 12.B for planning and dispatching.

L. Transportation of Hazardous Materials.

Army and Air National Guard will adhere to applicable service regulations when transporting hazardous materials.

8. COMMUNICATIONS

(1) Prior to departure from a flight facility the AAML/MHEM shall contact either North Ops (1-800-231-5584) or South Ops (1-800-995-3473) to verify and relay the following information:

- a. Incident Order Number
- b. Order Request Number
- c. CAL OES mission number
- d. Incident name
- e. Incident location (legal location, latitude & longitude, and geographic description)
- f. Reporting location and contact:
- g. Frequencies
- h. Estimated time of departure (ETD).
- i. Estimated time of arrival (ETA).
- j. Assigned helicopter identification call sign (800) and Alpha #.
- k. Names of flight crew; AAML/MHEM and CMD personnel.

(2) Flight Following: Flight following en route to the incident shall be done with the federal or CAL FIRE Emergency Command Centers, and will be done in compliance with agency flight-following procedures. The CMD aircraft shall also open and close flight plans and flight-follow with the appropriate CMD or FAA facility, as per their unit standard operating procedures, until such time as the aircraft arrives at the fire incident. At all times the fire agency "Air Guard" frequency (168.625) will be monitored. North and South Ops will make contact on this frequency for all divert and cancellation information. The CAL FIRE assigned chalk number aircraft identifiers shall be used for all communications with GACCs, Air Attack, Helicopter Coordinators and helibases. Aircraft call signs shall be used for FAA flight following.

(3) Communications Equipment: CMD helicopters come equipped with an array of avionics that provide for communications on VHF, UHF and FM frequencies.

a. MHEMs operating as crew aboard military aircraft shall be provided a fully functional Internal Communication Systems (ICS) helmet plug connection. The MHEM shall be able to communicate with all flight crewmembers and receive/transmit on the VHF-AM/VHF-FM frequencies monitored during the activations.

b. VHF-AM Transceivers

One panel mounted VHF-AM aeronautical transceiver (VHF-1), operating in the frequency band of 118.000 to 136.975 MHz, with a minimum of 760-channels in no greater than 25 kHz increments, and a minimum of 5-watts carrier output power.

c. VHF-FM Transceivers

1. One aeronautical VHF-FM radio transceiver (FM-1). The transceiver shall operate from 150 to 174 MHz, permit the operator to program any usable frequency within that band while in flight, provide operator selection of both wide-band (25 kHz bandwidth/5 kHz modulation) and narrow-band (12.5 kHz bandwidth/2.5 kHz modulation) operation by channel for MAIN and GUARD operation. Transceivers shall be set to operate in the narrowband mode unless local conditions dictate otherwise.
2. Carrier output power shall be 10-watts nominal. The transceiver shall be capable of displaying receiver and transmitter operating frequency. Transceivers shall provide both receiver and transmitter activation indicators for MAIN and GUARD. Simultaneous monitoring of both MAIN and GUARD (168.6250 MHz) is required. Scanning of GUARD is not acceptable.
3. A CTCSS sub-audible tone encoder with a minimum of 32 standards selectable tones, meeting the current TIA/EIA-603A standard, shall interface with the above transceiver. The encoder shall encode a 110.9 Hz tone on all GUARD transmissions.
4. The transceiver's operational controls shall be mounted in a location that is convenient to both pilot and co-pilot/observer.
5. Aircraft having two or more aeronautical VHF-FM radio transceivers need only have a GUARD receiver in the first transceiver (FM-1).

e. National Guard Helicopters:

Army National Guard helicopters

- VHF-FM: 138.00-174.00 MHz (CAL FIRE Technisonic radio)
- UHF-AM: 225.000-399.975 MHz (military radio)
- VHF-FM: 30.000-87.975 MHz (military radio)
- VHF-AM/FM: 116.000-151.975 MHz (military radio)

UH-72 Lakota (only)

- Wolfsburg RT-5000
 - Main Radio: 29.7-970 MHz AM/FM (analog only)
 - ITM 1: 136-174 MHz FM
 - ITM 2: 380-470 MHz FM

- Second RT-5000 (Mission Equipment Package UH72 only)
 - Main Radio: 29.7-970 MHZ AM/FM (analog only)
 - ITM 1: 450-520 MHZ FM
 - ITM 2: 806-870 MHZ FM

- ARC 231
 - 30 to 512 MHZ AM/FM

- P-2000 (Utility and MEDEVAC UH72s only)
 - ITM1: 450-520 MHZ
 - ITM2: 806-870 MHZ

Air National Guard helicopters:

- VHF-FM: 138.00-174.00 MHz (CAL FIRE Technisonic radio)
- UHF-FM: 225.000-399.975 MHz (25 MHz intervals)
- VHF-AM/FM: 30.000-87.975 MHz (Low FM)
 - 116.000-173.975 MHz (High FM)
 - 108.000-151.975 MHz (AM – receive only)
 - 116.000-155.975 MHz (AM – transmit/receive)
 - 156.025-162.025 MHz (Maritime)

f. As a means of improving CMD helicopter communications with firefighting ground and air assets, a CAL FIRE radio has been provided for each operational helicopter. It is essential for the safe operations of CMD aircraft on the incident that these radios are operational and that flight crews and agency personnel are proficient in its use. Interagency frequencies are normally pre-loaded in each radio.

g. The CAL FIRE FM/VHF radio provided to the CMD for use in the military helicopter is a Technisonic Industries TFM-138 series. These radios provide 120 operator programmable preset channels in the frequency range of 138 to 174 Mhz. An operator guide shall be on each aircraft equipped with these radios. Programming instructions shall be carried by all AAML/MHEM who shall become familiar with the operation of these radios.

h. Inventory Control of Radios: The following is a list of CAL FIRE Technisonic TFM-138B radios assigned to each Army / Air Aviation Support Facility. CAL FIRE AAMLs are responsible for knowing the location of each of these radios at all times and will coordinate with the facility for storage, maintenance and programming. An updated inventory list with status of each radio shall be sent to the CAL FIRE program administrator by June each year. CMD will allocate radios to all supported aviation facilities. CMD will coordinate allocation with CALFIRE Telecommunications Division. Army will manage inventory and maintenance of the 136A radios.

i. Frequency loads will be updated and distributed from CAL FIRE on an

annual basis. These updates will be distributed and loaded into CMD aircraft prior to annual certification training. Coordinate with CAL FIRE TELECOM division for updated programming.

j. The California Department of General Services – Telecommunications Division does not repair the Technisonic radio, because it is a very complex radio that requires special tools/techniques for board repair. CAL FIRE sends the radios out to an approved Technisonic repair facility for repair.

CAL FIRE radios must be made available for CAL FIRE maintenance when necessary. Radios will be removed prior to OCONUS (Outside the U.S.) deployment.

9. Military Staffing

A. CMD Incident Staffing:

The following are duties and responsibilities of CMD leadership personnel that must be assigned on an incident/complex. Recommendations can be made by any Aviation Commander or agency to add any of the following(except OIC), but the Aviation Commander can approve positions based on the complexity and size of the incident.

1. **Officer-in-Charge (OIC):** The senior commissioned or warrant officer assigned to a fire incident will assume responsibility as the OIC. The OIC may or may not be a pilot-in-command (PIC) or Aircraft Commander (AC) and the role of the OIC shall not be confused with the role of the PIC / AC. When an aircraft is engaged in a flight mission, the safe and efficient operation of the aircraft is the PIC / AC's responsibility regardless of rank. It is the OIC's responsibility to manage the following:
 - **Coordinate with the AAML** and Military Field Liaison
 - Responsible for the overall supervision of the unit
 - Coordinates with Avn TF, State Aviation Office or ANG Director of Operations
 - Responsible for disciplinary and legal issues at an incident
 - Supervise aircraft and aircrew scheduling
 - Supervise maintenance operations/logistics support
 - Enforce crew endurance policies
 - Enforce the safety program (air and ground)
 - Coordinate living areas and support requirements
 - Ensure data on crew and aircraft status is reported to the supporting flight (including a copy of the support agency daily cost form the supported agency) facility/facilities
 - Ensure mission briefings and approvals are conducted in accordance with established guidelines

- Enforce UCMJ and deal with disciplinary issues of military personnel on an incident
2. **Military Field Liaison (MFL):** All Activations will include an MFL, unless specifically denied or declined. Additional MFL or Assistant MFLs may be added to support the scope and complexity of fires. The MFL's only responsibility is as the MFL and will not be a crewmember. MFL shall have gone through the MFL/LNO Part II & III training. Duties include: Liaison between the incident AAML and the Aviation Task Force for supporting incident, assist the flight crew, manage aviation maintenance and refuel personnel, and serve as liaison to CAL FIRE personnel, Aviation Support Facilities and their respective players. When the MFL is the senior military officer at the incident, he or she performs the duties of the OIC or AFTC. MFL will work directly with the Fire Agency AAML.
 3. **Aviation Task Force Commander (ATFC):** During joint, interstate, multi-aircraft type deployments, or as determined by the CMD, an ATFC will be designated. The CMD will determine the composition of the Task Force by conducting a mission analysis of existing or projected Cal OES mission requests. The ATFC serves as higher headquarters over assigned subordinate tactical aviation assets.
 4. **Aviation LNO:** Upon activations, an Aviation LNO will be assigned to the JOC to liaison and capture all aviation statistics and costs. Will work closely with the J8 to ensure that all FORM A and Bs are submitted, verified and closed out daily. The LNO manages the Aviation DCO page and completes Aviation reporting on behalf of the Aviation Task Force. Hours and shifts will be determined by the J3 and SAO/Air.

B. CMD Aviation Staffing

(1) Aircrew staffing

Position Title	Number in Crew			
	CH-47	UH-72	UH/HH60A/L	HH-60G
Pilot-in-Command (PIC)	1	1***	1*	
Pilot (PI)	1	1	1	
Aircraft Commander (AC) ANG****				1
Pilot (MP / FP) ANG				1
Flight Engineer/Crew Chief (FE/CE)	2	1*****	1	1
Medic	0		1**	1**

*PIC possesses 500 hours PIC flight time

**required if serving as a Medevac aircraft

***requires 1500 total flight hours for single pilot operations

****AC (Air Guard) HH60G Aircraft Commanders will have a minimum of 500 hours as FP or MP in UH60 /HH60G aircraft and will be designated in writing by the Squadron Commander

*****FE not required for all operations

(4) Aviation Support Personnel: Additional aviation maintenance personnel and refuel personnel will be sent to the incident to sustain operations based on the size and scope of the mission. These personnel are called the “aircraft support team” Generally, a minimum of one fuel truck and two refuel personnel will be dispatched to each incident. The number of personnel and composition of the aviation support team is recommended by the Facility Commanders, but ultimately is the decision of the Aviation Commander. 10. FIRE AGENCY STAFFING

(1) The cooperating fire agencies have established three positions for the purpose of the efficient management of this program. These are the Agency Aviation Military Liaison (AAML), Military Helicopter coordinator (MLCO) and the Military Helicopter Manager (MHEM). These positions are based on agency management personnel recommended in the National Interagency Fire Center’s “Military Use Handbook”, NFES 2175, dated July 2006. Duty Statements for these positions are included in exhibit 10-1.

(2) An MHEM will fly aboard all CMD aircraft while the helicopter is activated. However, when deemed necessary by the Requesting Agency, CMD Aircraft may deploy and operate on Agency Incidents without a MHEM when the PICs have been approved by CAL FIRE and CMD. When aircraft deploy without a MHEM, they will be deployed as a team/flight and managed by an Agency Aviation Military Liaison (AAML) or MHEM on board one of the aircraft. CAL FIRE will make a continuous, sustained effort to provide a qualified MHEM for each CMD aircraft in use. CAL FIRE will ensure logistics for aircraft without a MHEM is managed. Exceptions may be made for flights to and from the incident or when available CMD aircraft outnumber the available MHEMs CMD will nominate PICs for approval of non-MHEM operations to CAL FIRE Aviation Management Unit (AMU) Helicopter Program Manager with courtesy copy to the CAL FIRE TAO NLT the annual inter-agency training.

(3) The AAML and MHEM will use the California Department of Forestry and Fire Protection "Aviation Management" 8300 handbook, or the federal agencies "Interagency Helicopter Operations Guide" (IHOG), as guiding policy and procedure, and will be knowledgeable of this operating plan as pertinent to the assigned mission. They will also insure that the CMD helicopters, personnel, and equipment assigned will be utilized in the safest, most effective, and most suitable manner.

(4) Exhibit 10-2 is an Incident Mobilization Checklist to be used by AAMLs and MHEMs when preparing to mobilize a National Guard helicopter for firefighting operations.

(5) Exhibit 10-3 is a Daily Operations Debriefing Guide and Firefighting Mission Evaluation form. This document should be used to document each day's mission, including the problems encountered and solutions applied, so that this information can be included in future program training.

C. AAML & MHEM Roles, Duties, and Responsibilities

1. AAML Duties Pre, during, and post Activation: The AAML, in close coordination with the CAL FIRE Tactical Air Operations (TAO) is the hub for coordinating the tactical activation (equivalent to mobilization using military terms) between CAL FIRE and the CMD supporting elements. AAMLs coordinating with facilities during fires may not be the same AAML normally assigned to the facility, so it is imperative that all AAMLs understand the procedures and processes for activating the CMD.

A. PRE-ACTIVATION :

(1) Serve as lead person for contact with the tasked NG support facilities. Establish and maintain positive interpersonal and interagency working relationships with National Guard and other fire agency staff.

- Individual agency values and policies are addressed throughout the tenure of the incident.

- Differences in agency values and policies that affect the operation are arbitrated in a manner that fosters continuous positive working relationships.

(2). Obtain and assemble current information and materials needed for flyaway kits. Kits will be assembled and prepared prior to receiving an assignment. Kit will contain critical items needed for the assignment and items needed for functioning during the first 48 hours. Kit will be easily transportable and within agency weight limitation See Exhibit 14-1 for fly-away kit inventories. AAML/HMEM will ensure these items are current prior to each activation. The basic information and materials are listed in enclosed inventory sheet:

- OPS Agreement
- Incident Response Pocket Guide (IRPG)
- Specific forms appropriate to the function.
- ICS 420-1, Field Operations Guide.
- Individual checklists/reminders.
- Frequency Sheets and Radio Call Plan
- Agency- or position-specific supplies.

1. (3). Ensure that an initial inventory checklist is completed and all equipment is brought up to initial attack standards prior to responding to the incident.

B. ACTIVATION: Cal OES will notify the J3/JOC of signals for or valid requests for activation of CMD assets. The Sac ECC or Regional GACC at the same time will contact CAL FIRE CMD Program Coordinator (TAO) or TAO duty officer. Once the Cal OES mission # is assigned, the TAO will typically coordinate direct with J3 and SAO to provide potential requirements and determine availability information. The AAML will contact CMD support facility and prepare for activation, to include locating MHEMs. TAO will ensure that one AAML per activating facility is ordered. The AAML shall coordinate with either TAO or the GACC Aviation Coordinator if assigned.

CMD(1). ACTIVATION- Obtain information:

- Order and Incident Number.
- Request Number.
- Cal OES Mission Tasking Number and CAL FIRE Aircraft A-number. Ensure that aircraft are properly equipped and marked, and that crews are equipped and ready to be activated for response to an incident.
- Ensure that MHEMs have been ordered for each helicopter, that they have arrived at the facility, and that they have been assigned to a flight crew.
- Reporting Location.
- Reporting Time.
- Transportation arrangements/Travel Routes.
- Contact procedures during travel (radio/telephone).

(2). Obtain and provide incident order and request information to the assigned MHEM, National Guard flight crews and support personnel (Technical Specialist Purchasing, Motel Manager, Procurement Specialist, Logistics Manager, as needed).

(3). Gather information necessary to assess incident assignment and determine immediate needs and actions.

C. AAML INCIDENT ACTIVITIES:

(1). The AAML is directly responsible for supervising the fire agency personnel assigned to the military aircraft. The AAML is the Agency Officer in Charge of the activation.

(2). During Activation, aircraft are in support of the Incident Commander and receive taskings through the AAML and MHEM. Operational control of the aircraft resides with the CMD Aviation Commander. The CMD will deploy LNOs and MFLs appropriately to ensure minimal to no delays are experienced in the dispatch process.

(3). The AAML authority is delegated by Cal OES through the Region OCC.

(4). Establishes the communication link between the TAO Duty Officer, AOBD, AGS and HEB1 and with CMD aircrews coordinated through the MFL.

(5). Determine organization and personnel needs of subordinate staff and flight crews and order as needed. Have knowledge of the aviation support teams created by the CMD and deployed to the incident.

(6). Ensures that the necessary fuel, transportation, communications, lodging, and all other logistical support required to perform the mission is ordered using the proper incident logistical support chain of command.

(7). Facilitates and coordinates with the CMD OIC, MFL and Agency Representative, and monitors any support requirements necessary to maintain CMD personnel and/or aircraft mission readiness.

(8). Works with MFL, AOBD, helibase manager, and if activated, the Region Aviation Coordinator (RAC) to coordinate the scheduling of maintenance personnel requirements. The duty hours of maintenance personnel will be adjusted to facilitate maintenance during non-flying hours. Ensures there is adequate security for the protection of CMD equipment.

(9). Attends all briefings and meetings regarding the operation of the CMD helicopters as necessary.

(10). Conducts briefings and debriefings relative to operations and activity of the CMD helicopters, personnel, and equipment.

(11). Determine aircraft and support equipment needs.

(12). Review current Operating Plan procedures.

(13). Within the first operational period after check-in, obtain incident information from the IC, AOBD, ASGS, ATGS, and or HEB1.

- Update incident information by the beginning of each operational period.
- Attend operational briefings.

(14). Assemble information specific for agency being supported to use in answering requests and resolving problems.

- Contact persons.
- Radio frequencies.
- Phone numbers.
- Cooperative agreements.
- Equipment type, Number of personnel.
- Status of equipment and personnel.

(15). Coordinates with appropriate agency safety officer to investigate and complete the paperwork regarding an accident or incident involving CMD helicopters, equipment, and personnel.

(16). Ensures that the Daily Operation Debriefing (Exhibit 9) documents are completed by the AAML and submits to the appropriate agency.

(17). In the absence of the MHEM, performs the MHEM duties.

(18). May order additional personnel as necessary for operational support.

D. MHEM Incident Activities:

The MHEM coordinates with the AAML at all times. When on an incident, MHEMs report to the Helibase Manager. MHEM is a member of the CMD flight crew for the purposes of coordination and aerial wildland firefighting expertise. The MHEM will ensure that the CMD personnel, aircraft, and equipment assigned are configured in accordance with this OPLAN and suitable for the assigned mission. For UH-72A activation, the HLCO if qualified will assume MHEM duties and responsibilities.

- Monitor the crew and aircraft readiness, availability and assignments through the ICS system and AAMLs. Reports availability at the start of every day.
- Ensure the performance planning, load calculations, and fuel management are

completed daily.

- Ensure the mission objectives are communicated and understood.
- Conduct risk analysis for specific mission or flight.
- Establish and maintain appropriate flight following.
- Maintain airspace coordination with controlling aircraft and other air resources.
- Ensure the aircraft effectiveness is maximized and utilized appropriately.
- Ensure that the assigned AAML is informed of any issues or changes in CMD personnel, aircraft or equipment.
- Maintain records of daily flight hours using Aircraft Summary Forms (Form A's), crew duty hours, and accumulated totals and route copies to the ASGS, HEB1 and AAML.
- When the AAML assigned to the incident is unavailable, the MHEM will ensure CMD personnel, aircraft and equipment needs are addressed through the HEB1.
- MHEM, in the absence of AAML, will arrange logistical support for flight crews and maintenance crews.
- Ensure that an inventory checklist is completed and damaged equipment is repaired or replaced prior to leaving the incident and upon return to the home facility and costs are charged to the incident.
- Completes the Daily Operations Debriefing document and submits to AAML
- Provide copies of all daily cost reports to Pilot-in-Command.

E. INCIDENT DEMOBILIZATION

(1). Facilitate demobilization operations

- Meet with agency and gather information on the status of personnel and equipment and release priorities prior to demobilization and record on ICS-214.
- Attend demobilization meeting.
- Provide assisting and cooperating agency input to process.
- Supply cooperating and assisting agencies with demobilization information at least one operational period prior to demobilization.
- Record demobilization of agencies on unit ICS-214, and file all records with Documentation Unit.
- Complete demobilization process for yourself.

(2). Upon release of the CMD assets, completes evaluations of assigned CMD helicopter(s), CMD crew(s), and assigned agency staff. Maintains a suitable file of all documentation associated to assignment, including the ICS-214 Unit Log.

(3) Will assure all CAL FIRE 63s are correct and complete. The AAML is responsible to have the CAL FIRE 63 cost package and any associated documentation deposited at the Sacramento ECC at Mather.

11. ORDERING AND RELEASING NATIONAL GUARD HELICOPTERS

A. ORDERING

California National Guard helicopters are committed to a CAL FIRE incident or pre-position through the ACTIVATION process. Predicted weather events and potential draw-downs should be utilized as trigger points to initiate CMD activation.

All wildland fire agency requests for CMD assistance will be placed with the California Department of Forestry and Fire Protection (CAL FIRE). Sacramento Command Center. CAL FIRE will forward these requests to OES. CAL FIRE simultaneously coordinates with the CMD J3 for support of the pending request.

The fire agency process for ordering National Guard helicopters is shown in Exhibit 11-1, (CALFIRE DOCUMENT 8100, procedure 331).

Activation Procedure:

1. Fire agencies place a request for activation of CMD helicopters through normal resource ordering channels to the CAL FIRE Sacramento Fire Protection Duty Chief. (See CAL FIRE Handbook 8100 Procedure 331)
2. Once the CAL FIRE Sacramento Fire Protection Duty Chief receives Director's approval, the Duty Chief or the CAL FIRE Sacramento Command Center will place the request for activation with Cal OES Fire and Rescue.
3. Cal OES reviews the request. If approved, Cal OES assigns a mission number and places the request with the CMD Joint Operations Center (JOC).
4. J3 reviews request. If supportable, J3 advises Cal OES, notifies appropriate CMD staff, and assigns the mission to the appropriate force provider (Army or Air). JOC also notifies Cal OES that they have accepted the mission.
5. Cal OES notifies CAL FIRE Sacramento Command Center that the mission has been accepted by CMD, and transfers the helicopters in ROSS (Resource Ordering and Status System). The Command Center creates a CA-CDF Incident Number, relays the information to the requesting GACC, and notifies the TAO Duty Officer.
6. The CAL FIRE Tactical Air Operations Duty Officer will locate an Agency Aviation Military Liaison (AAML) for tasking. The AAML will then locate one Military Helicopter Manager (MHEM) per helicopter to the facility or facilities being activated. If one MHEM per helicopter is not available, then a risk assessment will be conducted by CAL FIRE and CMD/ANG to determine if one MHEM for multiple aircraft is acceptable as long as

the helicopters work directly together. At the direction of the AAML, MHEM's may link up with CMD helicopters at other locations.

7. MHEMs will be instructed to report to the Aviation Support Facility that the helicopters will be coming from soon enough to allow them to conduct an inspection of firefighting equipment and fire radio prior to the helicopter's departure for the incident. This will be coordinated by the AAML as there will be times where the helicopter may need to meet with the MHEM at a predefined location.

8. The CMD Army or Air Division receives the mission from the JOC, and directs the required personnel and equipment to report to the appropriate support facility to prepare for mission:

- Flight crews
- Maintenance and support personnel
- POL and aerial port personnel
- JOC LNO and Command and control personnel (if not supported by full time manning)

9. CMD personnel report to the Aviation Support Facility/Aviation Task Force and prepare helicopters for departure to a fire assignment. For aircraft activated at non-supported CMD facilities, aircraft and crews may be required to relocate to a supported facility to prepare for fire-fighting operations.

10. When the helicopters are ready to depart, component facility notifies the JOC that helicopters are available for dispatch.

11. JOC notifies Cal OES that helicopters are available for dispatch. .

12. Cal OES notifies CAL FIRE Sacramento Command Center or HQ Fire Protection Duty Chief that CMD helicopters are available for dispatch.

13. CAL FIRE Sacramento Command Center or Duty Chief advises appropriate Region Command Center, which relays the information to the requesting unit.

14. CMD helicopters and flight crews will remain assigned to an activation number, until either assigned to an incident or the mission is cancelled by Cal OES.

24 Hour CMD Helicopter ACTIVATION Period

To complete all the necessary preparations to configure the aircraft and assign the flight crews, 24 hours notice will normally be required prior to deploying for wildfire operations. Deployment prior to 24 hours will depend on pre-warning time. The AAML or MHEM will, in conjunction with the OIC, use the Incident Mobilization Check List

(Appendix D). The following is the normal sequence of events that occur prior to CMD unit deployment to an incident.

- Flight crews identified, called in, briefed and flight planning completed.
- Fire agency AAML/MHEM identified and linkup location and time is established.
- Radios installed, frequencies assigned and checks completed.
- Water bucket checked and loaded.
- Maintenance support kit loaded.
- Identification number painted on aircraft.
- Medical Equipment and Hoist installed (if required for MEDEVAC mission tasking).
- Aircraft preflight by flight crew.

Note: Many of these items may be done simultaneously. This is not a cumulative time line, but simply a list of the items that must be accomplished prior to deployment.

DISPATCH Procedure:

1. The AAML will receive dispatch (FC-106) information via phone from SAC CC. Where aircraft are already deployed, the AAML/MHEM may receive orders through normal dispatch procedures.

2. The final authority for a CMD aircraft to launch on a new activation, mission re-assignment or any release rests with the J3. PICs have the authority to divert without delay in flight, provided they notify their military chain of command as soon as practical. The JOC needs to receive notification of all aircraft movement. This can be accomplished through the CMD LNO assigned to the GACC or Sac ECC, and/or the MFL assigned to the element.

3. CAL FIRE Command and Control has the ability to assign an aircraft to a different incident within California without pursuing a new Mission Request MRTCAL OES so long as any reassignment or divert is coordinated and approved by the CMD J3.

AIRCRAFT REPLACEMENT:

The CMD will not normally replace Blackhawk / Pavehawk helicopters with Chinook helicopters (or vice versa) assigned to a fire incident without prior consultation with the Incident Commander or designated command staff officer. When it is necessary for

CMD to make such a change due to maintenance or otherwise, the CMD will advise the Incident Commander or AOBD of the change, and the reason for it, as soon as possible. The MHEM/AAML will advise the Sac ECC, and the JOC will advise CAL OES prior to deployment so that a new 112 and aircraft request number may be issued.

B. RELEASING (including REDEPLOYMENT & divert)

1. CMD aircraft will be released from an incident as soon as the incident no longer requires CMD assets based upon the fire situation and/or quantity of available commercial aircraft. The only exception is a temporary release of a MEDEVAC capable aircraft from an incident when directed to support a MEDEVAC mission
2. When a CMD helicopter is tasked with a MEDEVAC mission outside of a fire incident mission, CAL OES will assign a new mission number, where the helicopter will be released from the fire. If an MHEM is assigned to the ship at that time, he/she will not be a part of the mission, and will be reassigned when a helicopter is reassigned to the incident.
3. AAMLs and MHEMs are not authorized to release any CMD aircraft from an Incident. CMD aircraft releases from any incident must be approved by the Incident Commander, or AOBD. The release or deactivation process will then follow the established procedures, which includes the aircraft to be reassigned in ROSS back to the activation number prior to deactivation or receiving a new fire incident order and request number.
4. CMD helicopters will not depart from the incident until they have received release confirmation from their fire agency supervisor (AAML or MHEM) CMD aircrews will notify their chain of command of divert or release orders as soon as able.
5. When release is imminent, MHEMs should prepare the Helicopter Demobilization Information Sheet (HBM-13)

AIRCRAFT DEACTIVATION:

1. CAL FIRE will make every effort to notify the CMD, and CAL OES 24 hours prior to deactivation for reflex purposes.
2. Once released back to the facility for a deactivation it will be the responsibility of the MHEM or AAML assigned to the aircraft to make sure the fly-a-way kits and fire gear has been rehabbed and replenished for the next operation. The MHEM is allotted up to 48 hours, but may upon approval extend longer, and \$1500.00 for this purpose, which would be billed to the activation number. The MHEM or AAML will secure an S# for

consumables used on an incident through the incident Finance Section for any purchases charged against the fire/incident.

3. Deactivation time for CMD Personnel will be up to 72 hours for purposes of returning the helicopters to their previous alert status.

12. HELICOPTER & MEDEVAC UTILIZATION AND CHARACTERISTICS

A. CMD Helicopter Utilization Strategy and Hourly Reimbursement

Safe, efficient and economical utilization of CMD aircraft is always a concern in deciding aircraft missions. Once CMD aviation assets have been assigned to the incident, and the mission designation identified, there will be no delineation in the use of military or civilian aircraft. The most suitable aircraft shall be used for each mission. MHEMs and AAMLs shall know the capabilities of the CMD aircraft in order to advise the ASGS/AOBD and Incident Commander on best utilization of the aircraft.

CMD helicopters activated and on an incident should be available and utilized to their fullest potential and shall plan for the maximum available mission hours possible. Beginning the first day of activation and once available for dispatch, CMD shall bill a minimum of 3-hours flight time (Standby time) per day when the aircraft was available for at least nine (9) cumulative hours during an operational cycle. . Reasons for not achieving 9-hours availability are maintenance, crew, and/or operational delays caused by the CMD. When actual flight hours exceed 3-hours then all flight time will be billed as actual. On the last day of an activation actual flight time only will be billed. TAO or CAL FIRE Military liaison must pre-approve billed flight hours for ferry flights, crew change/swaps and other missions activated under a FC-112.

Reimbursement for aircraft flight time will be based on current FY DOD and National Guard Bureau State reimbursement rates (which include aviation fuel). If the supported agency provides aviation fuel, the total fuel cost will be deducted from CMD billing.

CMD helicopters are considered “standard category” aircraft and can be used for the transportation of passengers and external loads including water-dropping operations. For the purposes of this agreement, UH/HH-60 A/L, HH60-G and CH-47 D/F helicopters are utilized as Type I aircraft.

B. MEDEVAC.

For every incident and location, the AAML, MHEM, PIC and the Incident Commander must coordinate, agree on and communicate logistical arrangements and launch procedures adequate to manage rest and establish desired MEDEVAC response times and hours. The MEDEVAC PICs, MHEMs and AAMLs plan and determine response times, crew rest, transportation, communications plans etc in

order to ensure 24/7 coverage. CAL FIRE AAML will establish MEDEVAC dispatch procedures per Exhibit 12 Medevac Dispatch Procedures. TAO must approve the procedures and convey MEDEVAC availability, risk and considerations to IC Command(s) and AOBD(s). AAML, TAO and AOBDs will evaluate risk to ground crews when MEDEVAC is not available due to crew rest or if the 7-hour daily flight time limitation exhausts crew for a 24-hour cycle. See para 7.K. Crew endurance on establishing and coordinating MEDEVAC crew endurance. The CMD will coordinate to provide additional coverage to fill MEDEVAC gaps, (example, providing additional aircrew) if unmitigated risk to firefighters remains and no other resources are available to provide temporary MEDEVAC coverage.

Special training: at a minimum, CMD will ensure the CAL FIRE MHEMs assigned to a MEDEVAC crew receive hoist and NVG ground familiarization in order to integrate MHEMs. PICs will ensure they have all Area of operations IAPs and information and training flights day and night are encouraged to familiarize MEDEVAC crews.

C. CMD Aircraft Numbering and Marking

All CMD aircraft will be marked in accordance with the numbering sequence and high visibility schemes as referenced in this plan prior to deployment to an incident. If for some reason an aircraft is deployed without being marked it will not be allowed to engage in flight operations on the incident until it is properly marked. CMD aircraft are numbered using an 3-series sequence of numbers which are assigned by facility and aircraft.

Type Aircraft	Facility	Identifier
CH-47D	Stockton	800-819
UH-60A/L	Mather	820-829
UH-60A/L	Los Alamitos	830-839
UH-72A	Stockton	Last two #'s of aircraft tail number
HH-60G	Moffett	840-849
TBD	Other T32	850-899

Aircraft will retain the same identifying number until released from all fire activity. CMD will ensure that only one Chalk number is in use at a time. It will be the joint responsibility of the requesting agency and CMD facility to ensure that aircraft are cleaned.

PAINTING: CMD facilities shall be responsible to number aircraft prior to deployment and shall keep on hand the necessary materials. The approved paint is “Pink, Shocking” or other color approved by TAO. Paint should be applied in strong concentration: do not over dilute. Any paint used other than the approved tempera will damage the infrared paint on the aircraft. The UH-72 can use decals.

D. CH-47D “Chinook” Characteristics

1. **General Description:** The Chinook is a twin-turbine engine, tandem-rotor helicopter. The primary mission is the transport of firefighters, supplies, equipment and water-dropping operations. The aircraft has three external hooks for sling load operations. The aircraft has a maximum seating capacity for 33 personnel. Normal configuration is four seats for the crew, one for the helicopter manager, two seats removed for equipment storage, leaving 29 seats for passengers. The aircraft is deployed with either 2000 or 1300 gallon collapsible bucket and/or 2000 gallon rigid bucket. CH-47 can perform long line sling loads w/ proper equipment.
2. **Performance Data:** The following planning data is based on a full load of fuel (6600 lbs), a maximum passenger capacity of 29 seats available and Out of Ground Effect (OGE) hover power. A firefighter is calculated at 200 lbs.

<u>Pressure Altitude/Temp</u>	<u>Cargo Load (lbs.)</u>	<u>Passengers</u>
2000/20C	18,000	29
2000/30C	16,500	29
2000/40C	13,000	29
4000/20C	16,000	29
4000/30C	13,000	29
4000/40C	9,500	29
6000/20C	10,000	29
6000/30C	9,500	29
6000/40C	6,300	29

E. Army UH/HH-60A/L “Black Hawk” Characteristics

1. **General Description:** The Army National Guard UH/HH-60A/L Blackhawk or is a twin-turbine engine, single-rotor helicopter. The primary fire suppression mission activities are the transport of firefighters, supplies and equipment, and water-dropping operations. The aircraft has an external hook for sling load operations. The aircraft has a maximum seating capacity for 17 personnel(including standards crew of 3), but normally will come configured with three or four seats for the crew, one for the helicopter manager and up to 7 seats for passengers. The helicopter is equipped with automatic flight control, engine anti-icing, and blade de-icing systems which provide all-weather flight capability. The HH-60L is equipped with a high-speed external hours, forward looking infrared radar (FLIR), weather radar, and a medical interior. Aircrews are trained and equipped for firefighting operations as well as night, limited overwater, and high altitude search and rescue operations. The HH-60L can be quickly configured to carry typically four, but up to six liters and has an externally mounted rescue hoist. For firefighting missions the aircraft is deployed with either a 780 or 660 gallon collapsible bucket or a fixed tank. For firefighting missions the aircraft is deployed with

either a 780 or 660 gallon collapsible bucket or a fixed tank. Army UH-60s can perform long line sling loads w/ proper equipment.

For MEDEVAC missions not concurrent with firefighting missions, MEDEVAC aircraft will be configured with a rescue hoist, adult trauma medical equipment, extraction devices, crash kit, litters, oxygen, and is capable of carrying four litters, crewed with a flight medic, and with the passenger seats removed.

2. Performance Data:

The following planning data is based on a fuel load of (2450 lbs), a maximum passenger capacity of 10 seats available and out of ground effect (OGE) hover power. A firefighter is calculated at 200 lb., with equipment. The UH-60L has increased performance capabilities over the UH-60A/HH60L, but the maximum number of passengers is unchanged.

<u>Pressure Altitude/Temp</u>	<u>Cargo Load (lbs.)</u>	<u>Passengers</u>
2000/20C	6250	10
2000/30C	5700	10
2000/40C	4800	10
4000/20C	5400	10
4000/30C	4800	10
4000/40C	3200	10
6000/20C	3900	10
6000/30C	3600	10
6000/40C	2100	10

The following “Go, No-go” tables are based on an **Out-of-Ground-Effect** (OGE) hover height. They reflect the amount of fuel onboard at the time of lifting the Bambi Bucket, not necessarily at the time of take-off.

Go, No-Go Performance for Bambi Bucket Operations – UH-60 A/L

(Power Available/Power Required/Go, No-Go)

2300 lb. fuel onboard, 2 hours of flight time, plus 20 min. reserve fuel.

GW 19,487 lb.					
OAT °C (°F)	2000' PA	3000' PA	4000' PA	5000' PA	6000' PA
20° (68°)	102/92/ Go	98/94/G o	95/95/G o	91/98/NG	NG

25° (77°)	99/93/G o	96/94/G o	92/96/N G	NG	
30° (86°)	96/93/G o	93/95/N G	NG		
35° (95°)	92/94/N G	NG			
40° (104°)	NG				

1300 lb fuel onboard, 1 hour of flight time, plus 20 min. reserve fuel.

GW 18,487 lb.					
OAT °C (°F)	2000' PA	3000' PA	4000' PA	5000' PA	6000' PA
20° (68°)	102/85/ Go	98/87/G o	95/89/G o	91/90/G o	88/92/NG
25° (77°)	99/86/G o	96/87/G o	92/89/G o	89/91/N G	NG
30° (86°)	96/87/G o	93/89/G o	89/90/N G	NG	
35° (95°)	92/87/G o	89/89/G o	NG		
40° (104°)	89/87/G o	86/90/N G			

810 lb fuel onboard, 30 minute of flight time, plus 20 min. reserve fuel.

GW 17,997 lb.					
OAT °C (°F)	2000' PA	3000' PA	4000' PA	5000' PA	6000' PA
20° (68°)	102/82/ Go	98/83/G o	95/85/Go	91/86/G o	88/88/G o
25° (77°)	99/83/G o	96/84/G o	92/85/Go	89/87/G o	85/89/N G
30° (86°)	96/83/G	93/84/G	89/86/Go	85/87/N	NG

	o	o		G	
35° (95°)	92/84/G o	89/86/G o	85/87/NG	NG	
40° (104°)	89/84/G o	86/86/G o	NG		

F. HH-60G PAVE HAWK Characteristics

1. General Description: The Air National Guard HH-60G PAVE HAWK is single-rotor helicopter powered by two General Electric T700-GE-701C turboshaft engines. The helicopter is equipped with automatic flight control, forward looking infrared radar (FLIR), weather radar, engine anti-icing, and blade de-icing systems which provide all-weather flight capability. The HH-60G is also capable of inflight refueling from equipped C-130 aircraft via an extendable refueling probe. HH-60G aircrews are trained and equipped for firefighting operations as well as night, overwater, and high altitude search and rescue operations.

In a standard configuration, the HH-60G can carry up to 12 passengers in seats or accommodate up to 6 litters. In the firefighting configuration, the HH-60G carries a crew of 4 and is capable of transporting a 660 gallon collapsible fast-fill Bambi Bucket that has been cinched and filled to 70% capacity (462 gallons). In this configuration, the HH-60G carries 2400 lb of fuel which provides approximately 2 hour flight duration.

Current United States Air Force flight regulations limit HH-60G operations as follows:

- Maximum gross weight is 22,000 lb.
- Maximum crew duty day is 14 hours.
- A qualified left scanner (e.g., Aerial Gunner, Pararescue Jumper (PJ), Combat Rescue Officer (CRO), etc.) is required for all low-level (below 500 ft AGL) operations.
- Without supplemental oxygen, maximum altitude for operations is 14,000 ft MSL.
 - Maximum flight duration above 10,000 ft MSL is 1 hour.
 - Maximum flight duration above 12,500 ft MSL is 30 minutes.

2. Performance Data: The following Go, No Go performance charts reflect an empty gross weight for the firefighting equipment configuration (14800 lb), two fuel loads (2400 lb = 2 hours, 1200 lb = 1 hour), a crew of 4 (800 lb), and 462 gallons of water (3800 lb). This equates to a gross weight of 21,800 lb and 20,600 lb respectively.

HH-60G Go, No Go Performance for Bambi Bucket Operations

Gross Weight (lb): 21800 lb		Fuel Remaining: 2 hours		
Outside Air Temperature		GO = OGE Power Required < Power Available		
		NO GO = OGE Power Required > Power Available		
°C	°F	2000 ft PA	3000 ft PA	4000 ft PA
10	50	GO	GO	NO GO
15	59	GO	NO GO	NO GO
20	68	GO	NO GO	NO GO
25	77	NO GO	NO GO	NO GO
30	86	NO GO	NO GO	NO GO
35	95	NO GO	NO GO	NO GO
40	104	NO GO	NO GO	NO GO

Gross Weight (lb): 20600 lb		Fuel Remaining: 1 hour		
Outside Air Temperature		GO = OGE Power Required < Power Available		
		NO GO = OGE Power Required > Power Available		
°C	°F	2000 ft PA	3000 ft PA	4000 ft PA
10	50	GO	GO	GO
15	59	GO	GO	GO
20	68	GO	GO	NO GO
25	77	GO	GO	NO GO
30	86	GO	NO GO	NO GO
35	95	NO GO	NO GO	NO GO
40	104	NO GO	NO GO	NO GO

G. Army UH-72A “Lakota” Characteristics

1. General Description: The Army National Guard UH-72A Lakota is a twin-turbine engine, single-rotor helicopter. The primary fire suppression mission activities are command and control (HLCO), the transport of firefighters and supplies, MEDEVAC/CASEVAC, and reconnaissance flights. The aircraft has a maximum seating capacity for eight personnel, but normally will come configured with three seats for the crew, one for the helicopter manager and up to seven seats for passengers. The helicopter is equipped with an automatic flight control, and engine anti-icing which provide instrument flight capability. There are three different configurations of the UH-72: MEDEVAC, Mission Equipment Package (MEP), and “slick.” The MEDEVAC configuration includes a medical interior for patient transport and a rescue hoist. MEDEVAC aircraft can be identified by the Red Cross emblem on the nose and sides of the fuselage.

For MEDEVAC missions not concurrent with firefighting missions, a UH-72 aircraft may be configured with a rescue and a medical transport kit capable of carrying one litter, crewed with a flight medic, and with the passenger seats removed. During a MEDEVAC transport, one crewmember may remain on the ground, providing one additional passenger seat.

The MEP configured aircraft includes forward looking infrared radar (FLIR), a high powered searchlight, additional digital screens for monitoring the FLIR.

The “slick” configuration has an open cabin area to allow for passenger or cargo movement.

Aircrews are trained and equipped for firefighting operations as well as night, limited overwater, and high altitude search and rescue operations.

2. Performance Data:

The following planning data is based on a fuel load of (1534 lbs), a maximum passenger capacity of 7 seats available and out of ground effect (OGE) hover power. A firefighter is calculated at 200 lb., with equipment.

Note: The table below shows the max cargo load or max passengers for a given PA and Temp. For example, at 2000 ft PA/20C the cargo load can be 1,219 lbs or 6 passengers at 200 lbs/ person, not both combined.

<u>Pressure Altitude/Temp</u>	<u>Cargo Load (lbs.)</u>	<u>Passengers</u>
2000/20C	1219	6
2000/30C	1219	6
2000/40C	1116	5
4000/20C	1219	6
4000/30C	1166	5
4000/40C	1066	5
6000/20C	1219	6
6000/30C	1016	5
6000/40C	616	3

13. FIRE INCIDENT OPERATIONS

CMD Type I helicopters will be utilized by the wildland fire agencies for water-dropping, crew transport, cargo transport and medevac. CMD helicopters will respond to the incident equipped with variable capacity water-dropping buckets and rigging with a capacity commensurate with the lifting capabilities of the aircraft. Prior to deployment, the bucket and aircraft must undergo functional checks and any necessary maintenance.

A. Performance Checks (HIT Check)

Ground run-ups will be conducted daily prior to any mission assignments, so that aircraft are available for immediate tasking on tactical operations. This procedure will reduce the potential for any unforeseen mechanical issues resulting in the delay of daily incident tactical tasking.

B. Water Dropping Operations

CMD Type I Helicopters will operate with water dropping buckets configured at either 70%, 80%, 90% or 100%. Configuration will be determined by performance planning data and will use the maximum allowable water capacity. **When conditions change throughout the day the bucket may be adjusted accordingly if the situation warrants and the action does not create additional risks for safe operation of the helicopter.**

1. Bambi Buckets (Collapsible):

Helicopter	Bucket Model #	Capacity (gals.)
UH-60A/L / HH-60G	5566HD / Torrentula valve	660
UH-60A/L	5678HD / Torrentula valve	780
CH-47	HL5000	1320
CH-47	HL7600	2000

A maintenance and operation checklist for Bambi Buckets is included as Exhibit 13-1.

The US Army Aviation and Missile Command has distributed an Airworthiness Release covering use of Bambi Water Buckets with UH-60A/L and HH60 A/L helicopters. Components will retained copies of AWRs in all logbooks and comply with restrictions.

The USAF HH60G Systems Program Office has distributed an Airworthiness Release covering use of TFM 138 radios and Bambi Water Buckets with HH-60G helicopters (HQ ACC 08-236, ACC 08-237). CH-47 Powerfill with Torrentula has capability to fill the 2,000 gallon Bambi bucket from water source as shallow as 24 inches within 90 seconds.

Cable Length: Caution must be exercised when rigging buckets and cables. Using an overall length greater than the distance from the cargo hook to the tip of the tail rotor could result in a tail rotor strike and possible loss of control of the helicopter. Long line cables (50ft+) may be utilized if the situation dictates and the aircrews are trained as per military standards and the Interagency Helicopter Practical Training Standards (IHPTS). CAL FIRE must specifically request the capability and CMD will provide the qualified crews.

2. Rigid Buckets

In addition to the collapsible Bambi Buckets, the fire agencies have provided rigid buckets for use with the CH-47. These buckets offer performance advantages over the collapsible buckets in certain situations, such as dip tank operations. These buckets will be stored at the Stockton AASF. CAL FIRE will maintain and assist in providing protective covers. The CAL FIRE facility liaison will ensure operational readiness during fires. When needed, the CMD will coordinate for line haul and movement of the buckets to fire incidents and will bill CAL FIRE for associated costs. The Agency Aviation Military Liaison assigned to the incident is the authority to activate these assets. See Exhibit 13-2 for details on the use of these buckets.

C. Portable Foam Injection Systems

CH-47D with water-dropping buckets may be equipped with foam-injection units. The addition of these units will enhance the aerial firefighting capability of the CH-47D. Agencies are responsible to insure that adequate supplies of fire fighting foam are available at the helibase for use by the aircraft. Operation of the foam units will be in accordance with agency policy in protecting domestic and livestock water supplies. The AAML/MHEM will coordinate with helibase manager prior to using this unit on any incident. See Exhibit 13-6 for detailed instructions on use of portable foam injection systems.

D. Crew Transport Operations

CH-47D. The aircraft has a maximum seating capacity for 33 personnel. Normal configuration is four seats for the crew, one for the MHEM, two seats removed for equipment storage, leaving 29 seats for passengers.

UH-60A/L Blackhawk . The aircraft has a maximum seating capacity for 17 personnel, but normally will come configured with three seats for the crew, one for the MHEM and 10 seats for passengers, two additional seats may be added for passenger transport. Aircraft are required to arrive with seats upon activation.

HH-60G PAVE HAWK. The HH-60G has a maximum passenger capacity of 12 personnel (in seats), but is not configured for passenger seating in the firefighting configuration. Four seats are required for aircrew members (two pilot seats and two crew seats). No other seats are typically installed unless specifically requested.

UH-72 Lakota. Upon activation, UH-72 aircraft may be used for personnel transport.

E. Cargo Transport Operations

Internal Cargo Transport/External Load Operations per agency / military service component standards.

14. CMD MISSION SUPPORT REQUIREMENTS

A. CMD Aviation Fuel Support:

(1). General: Unless managed different at a specific incident or location, CMD components are responsible for projecting resource demand and supplying aviation fuel (military Class III) to their aircraft. This includes planning for HEMTT Bulk fuel resupply.

(2) Aviation Refueling Operations:

a. Transit/Airfield: Individual component aircraft shall use the appropriate component's aircraft AirCard to pay for aircraft fuel in transit or at a base of operations where commercial fuel is provided as the method of refuel. If an airfield has more than one aviation fuel vendor, the DoD contract vendor must be used. If no DoD vendor is available, use the vendor with the least costly rate. If able, utilize Army HEMTT fuel resources at an airfield.

b. Remote Operations: Every CAL FIRE activation includes at least one HEMTT and crew. Activation with two or more CH-47s will have two HEMTTs. If more are required, the CMD will task. When a situation exists requiring aircraft to operate from a remote base where DoD contract fuel is not available or when aviation fuel availability is of concern, the CMD will task these HEMTTs support the mission. When activated, the HEMTT crew will receive instructions from the Army supporting facility or Aviation Task Force. Once at an incident, the HEMTT crew will report to the AAML and the MFL and are part of the aircraft support team. All HEMTT's must have a DOT certification to travel on public highways, and a full capacity of the appropriate aviation fuel upon arrival at the refueling location. At no time will aircraft, other than CMD equipment, be refueled without approval of the MFL or Aviation Logistics Officer. The J4 and the supporting AFF will maintain an emergency use US Government Air Card. The CMD CalCARD should not be used except as a last resort.

(2) Bulk (HEMTT) refueling purchasing methods and prioritization:

- Military Bases both National Guard or Active (Aviation Flight Facilities, Air Force, etc)
 - DoD Contract fueling locations. (www.baseops.net/contractfuel)
- Federal locations (Coordinate with J4/AAF for approval)
- Non-contract fuel locations utilizing Military Department credit card
- Non-contract fuel locations utilizing Supported Agency finance section

(f) Authorized Fuel type:

- JP4/8 or the Commercial equivalent (Jet A/B with PRIST)*
 - * "PRIST" or other antibacterial additive is authorized as determined by the flight crew.

(g) Fuel Accounting: Standard component management applies for accounting for fuel. All fuel dispensed by the HEMTTs shall be recorded on DA form 3643, Daily Issues of Petroleum Products, and maintained by the component. The OIC/MFL at the incident will ensure that Daily Aviation Logstat reports capture fuel provided to other than CA Army aircraft. The OIC/MFL will submit a copy of the DA form 3643 and the Fire Aviation Daily Report to the JOC & AVN LNO by 2200 hours each day. The fuel statistics provided to the **Air** National Guard or to **other than** California Army National Guard aircraft is critical for reimbursement to the California Army National Guard fuel account. Components may create additional requirements for

subordinate elements to ensure accounting is accurate.

CAL FIRE Fuel Purchases: In the event the supported agency provides aviation fuel, the fuel costs will be deducted from total bill. The MFL will maintain a daily log and report the CAL FIRE fuel billing to the J3 aviation LNO. The LNO will forward the report to the J4 daily after annotating the data on the LNO Tracker.

(h) **Fuel Cost Billing:** Aviation fuel costs are billed to the state (CAL FIRE) by the federal government via the “wet rate” after the mission/incident closes. This is a fixed DoD/NGB reimbursement flight hourly charge for the aircraft that includes fuel. The rate is established by DOD annually(See Appendix A for more finance details). In order to alleviate potential double billing, CAL FIRE should only pay for aviation fuel for components as a last resort, otherwise, whereby documentation will be kept by the MFL and AAML and the fuel cost will be credited to CAL FIRE. All aviation fuel will be paid for by the CMD. Air will reimburse Army for all fuel delivered to Air Guard aircraft by the HEMTT. The flight facility will coordinate the refueling payment of the HEMTT utilizing their US Government Any Aircraft AirCard©. As a contingency, the J4 directorate will coordinate refueling using its US Government Air Card and, in an emergency, use its state credit card with prior coordinating with the J8 contracting section.

(i) The J8 will account for and charge Title 10/EMAC partners that accept CMD fuel.

UH/HH-60A/L

- Burn rate is approx. 162 gallons (1085 lb.) per hour. Burn rate will vary depending on power requirements
- Fuel Types: Jet A-1 (JP-8); Jet A (JP-5)
- Total capacity: 360 gallons

HH-60G

- Burn rate is approximately 180 gallons (1200 lb) per hour for conservative mission planning. Burn rate will vary depending on power requirements.
- Fuel Type: Jet A-1 (JP-8) preferred, Jet A (JP-5) or Jet B (JP-4) possible
- Total Capacity: 360 gallons (usable)

CH-47D

- Burn rate: 382 gallons (2800 lb.) per hour
- Fuel types: Jet A-1 (JP-8) and Jet A (JP-5)
- Total Capacity: 1028 gallons

B. Helicopter Maintenance: To the maximum extent reasonable, maintenance will be conducted outside of the hours when the helicopter need be available for firefighting assignments. This may require that maintenance work be done at night. If nighttime maintenance is required, the fire agencies or CMD will provide sufficient portable lighting to allow CMD maintenance staff to perform such work. **The duty hours of maintenance personnel will be adjusted to facilitate maintenance**

during non-flying hours.

CMD maintenance and support elements will be deployed in conjunction with aircraft and flight crews. The number of personnel to be deployed is dependent on types of support to be provided, as follows:

1. Each Incident Site: Maintenance personnel can be expected to vary depending on the number of aircraft and type assigned. Maintenance requirements for CMD aircraft in the field are generally parallel to the civilian equivalent with 1-3 additional mechanics needed to conduct daily and periodic maintenance. At incidents with two or more aircraft one Maintenance NCO/Supervisor will be assigned. The maintenance supervisor will oversee on-incident repairs and preventive maintenance, coordinate scheduled maintenance with the supporting AASF, and process forms and records. Aircrews should not be expected to perform maintenance on aircraft in violation of crew rest requirements.

The ordering agency should plan for support of additional maintenance support personnel. When two or more aircraft are deployed to an incident the CMD will normally activate a Military Liaison Officer (LNO) and when necessary additional administrative support staff. This staff will work with the agency AAML on the incident.

2. Each Supported Facility: When the CMD activates aircraft, the support facility may also activate additional support staff to provide operations, maintenance and airfield services in support of activations. These CMD personnel will remain at the facility, are not deployed to the incident and are paid using the AD rates. The CMD is responsible for the sustainment (meals, lodging, etc) of these personnel. In the event CMD stands up a C2 node, the support facilities will release the additional personnel as C2 tasks get replaced.

C. Fire Mission Support Equipment

Each Aviation Support Facility is provided with a standard complement of equipment for supporting the helicopter and crew during firefighting assignments. This equipment includes a Support Kit, Fly-Away Kit, Communications Kit, Paint Kit, Water Dropping Kit, and SEI Bucket Repair Kit. Exhibit 14-1 of this plan contains a suggested inventory checklist for these kits. All of the items shown on this checklist should be available for a minimum of five (5) military helicopters at each Aviation Support Facility. Re-supply of these kits after an incident is the responsibility of the MHEM / AAML assigned to the fire incident. The Stockton Flight Facility requires eight (8) sets of the above identified equipment at all times.

Any damage of equipment that requires repair must be elevated to the TAO and Task Force Commander for determination of cost responsibility. Incident finance section shall be notified and supply numbers issued if CALFIRE is determined to be financially responsible (prior to leaving the incident).

15. TRAINING AND QUALIFICATIONS

A. Military Personnel

(1) Per the Cooperative Agreement, the California National Guard is responsible for meeting minimum qualification standards for aircrews and personnel that support wildfire operations. CAL FIRE will ensure training meets all CAL FIRE and USFS(Federal) qualification standards and is the authority for certification for CMD crews. The fundamental training program is based on the **NFIC** "Military Use Handbook" (NFES 2175) and the curriculum will be jointly developed by CMD and CAL FIRE to include program procedures and requirements. The training is broken into three parts, Part-I is CMD academic training and bucket qualification (military tasks), Part-II is CAL FIRE Academics, and Part-III is for a CAL FIRE practical exercises (Incident Training), required for LNO/MFLs. CMD aircrews and personnel will complete all training required by this agreement and CMD qualifications records (task sheet) will be maintained at Army/Air commands or facilities for aircrews/MFLs/LNOs. CMD will establish qualification requirements for other incident support personnel (e.g. fuelers, maintainers).

a. Part-I Annual required CMD training (Home station). Training should be completed prior to the CAL FIRE Part II academics training day. Training should be executed as a single training event to maximize effectiveness, but may be broken up. This training is typically executed at the AASF/AAML level. CMD maintains products/presentations for this section and are the primary instructors. These items are also required when CMD conducts JRSOI for T-10 and EMAC forces supporting CMD wildfire operations. If available, CAL FIRE/Agency personnel may be present for the training.

- Aircraft performance considerations and load calculations.
- Fire behavior/Fire shelter deployment.
- Preparation and preflight inspection of bucket.
- Techsonic TDFM136 and TDFM138 operation.
- Bucket qualification/refresher training, water-dropping bucket preparation, helicopter connection, operational checks, and preflight inspections.
- (Maintainers only) Aircraft preparation and high visibility identification paint scheme application.
- CMD Wild Land Fire Fighting (WLFF) Basic forms and records.

b. Part-II Annual CAL FIRE "Academics"(Joint, location TBD) will be conducted as a one-day training event at time and location agreed upon by CMD and CAL FIRE. CAL FIRE maintains and accredits products and presentations for this section and

selects the primary instructors. CMD personnel will co-present each topic in order to enhance joint capabilities and lessons. MHEM trainees will attend this training with CMD personnel to enhance joint learning of the program. There is an initial and annual recurrent training requirement, but CMD personnel should be present every year. Intent is all CMD personnel attend in-person academics, but a method for individual make-up training is allowed. Initial training (first time) for CMD personnel must be in-person and at this event. CMD personnel are authorized to conduct make-up training as an exception once initially qualified, but MUST go through in-person CAL FIRE Academics once every three years. Make-up training for CMD previously qualified personnel may be completed in-house by CMD personnel per Army/Air policy. Videos of training will not be used and qualification must be documented on the Qualification Worksheet. CAL FIRE must provide NG/T10 personnel this block when needed as part of the CMD JRSOI.

- Agency Aviation Policy and Joint Safety.
- CMD Ordering (Activation, Release and Deactivation).
- Incident Command System (ICS) / Air Operations Branch.
- Aircrew communications and coordination.
- Airspace Coordination (e.g. aerial supervision, communications, FTA, etc).
- Missions (Performance Planning, MEDEVAC, Cargo, Recon. PAX Haul and Water Dropping).
- Tactics and strategy.
- CMD WLFF Military Sustainment, Incident Support, finance and procurement.
- AAML & MHEM Duties.
- Lessons learned and open forum.

c. Part III Joint Practical Exercise for MHEM/ AAML/MFL/MFC/LNO: This training will be a simulated fire incident established by CAL FIRE, to include at a minimum an ICS, helibase and CMD response ISO CAL FIRE ICS objectives. Intent is to provide joint training and qualification for incident command/management personnel and will include: procedures for activation, helibase ops, fire ops, refuel ops, MHEM load calculation training and a bucket display (bucket, cables, flyaway kit, etc.). Flight training will be tailored to meet the needs of agency MHEM training objectives. This training is a requirement for MHEM/MFL/MFC/LNO/AAMLs. During this training, CMD will provide specific training for CMD MFL/MFCs/LNOs.

d. CAL FIRE/Agency familiarization and proficiency training: CAL FIRE TAO may coordinate with CMD Army/Air aviation facilities to get MHEM on opportunity training flights. This is opportunity training and does not require reimbursement. Army/Air will secure ITAs for CAL FIRE personnel through normal processes.

e. The CAL FIRE Tactical Air Operations Chief may approve alternate and customized scenario or other training for CMD aircrews that have been through the full training within the last three years, Intent is to build on the basic curriculum and provide other training. The training will be developed jointly and approved by CAL FIRE cadre.

f. Exceptions: Any individual or by name exceptions to this Chapter can only be approved by the CAL FIRE Tactical Air Operations Chief.

B. Fire Agency Personnel

Fire agency personnel must be properly trained for the type of mission they are participating in when that mission involves use of CMD military aircraft. The approved curriculum for annual MHEM training is shown in Exhibit 15 -1 of this plan. AAMLs will provide appropriate agency training staff with verification of attendance for MHEMs at the annual MHEM training. Listings of qualified fire agency personnel will be maintained by North and South Ops OCCs. There are task books to be utilized for both the AAML and MHEM. Individual tasks within the task book for MHEM can be signed by a qualified MHEM under the direction of the AAML.

Individual tasks within the task book for AAML can be signed by those members that are qualified AAML. The Final Evaluator for position task books shall be limited to the Program Administrator and or Program Coordinator.

Refer to CAL FIRE handbook 4039 for Agency Aviation Military Liaison (AAML) and Military Helicopter Manager (MHEM) experience and training requirements.

16. MEDIA RELATIONS

To ensure disruption of fire fighting operations is minimized and the safety of participating agency(s) military and media personnel is optimized, the California National Guard and Fire Agencies agree to the following:

1. Civilian media personnel will not fly aboard any aircraft assigned to firefighting operations. They may fly aboard other military aircraft within the Fire Traffic Area if:

- it meets the objectives of both the PAO and PIO, and
- is approved by the Fire Agency (from the AOBD through either the ATGS or AAML), and
- is approved by the California Military Department J3 and PAO.
-

2. CMD Uniformed Public Affairs personnel may be authorized to fly aboard firefighting aircraft and necessary to be on the aircraft in order to obtain specific film footage of military helicopter firefighting activities. Authorization for CMD PAOs to fly aboard firefighting aircraft is contingent upon completion of annual firefighting academic training which must include: annual PAO training during Part II training, fire behavior, and fire shelter deployment. The remaining topics are recommended, but not required. These CMD PAO personnel may be authorized to fly aboard these aircraft as long as it does not adversely affect the aircraft performance during firefighting operations, as determined by the CMD and Fire Agency and they have a type of personnel flotation device.

3. All media produced by the California National Guard Public Affairs Office (PAO) will be coordinated through the Incident Public Information Officer (PIO) prior to release.

4. Newspaper and television media personnel will be afforded access to Military and Agency personnel at the helibase in order to conduct interviews with prior approval from the Helibase Manager, AOBD or the AAML. This approval does not extend any approval to be with a ground or air crew.

EXHIBIT 6 – Removed

EXHIBIT 7 FREQUENCY AND RADIO MANAGEMENT

FREQUENCY MANAGEMENT. The CMD will use the current CAL FIRE published frequency list and will coordinate with CAL FIRE to program assigned radios.

CTCSS Standard Tones

CAL FIRE , USFS, and BLM have designated the following standard CTCSS tone assignments:

Tone-1	110.9 Hz	Tone-9	100.0 Hz
Tone-2	123.0 Hz	Tone-10	107.2 Hz
Tone-3	131.8 Hz	Tone-11	114.8 Hz
Tone-4	136.5 Hz	Tone-12	127.3 Hz
Tone-5	146.2 Hz	Tone-13	141.3 Hz
Tone-6	156.7 Hz	Tone-14	151.4 Hz
Tone-7	167.9 Hz	Tone-15	162.2 Hz
Tone-8	103.5 Hz	Tone-16	192.8 Hz

Note: CTCSS tone protection is activated within certain cooperators fire radio systems.

The correct CTCSS tone has been programmed for those radio systems and is designated, on this list, with the proper pre-programmed radio frequency.

Description and Operations:

Facility Liasons will ensure that radio programming instructions, manuals and frequency sheets for TDFM 138 and 136s are in all of the fly away kits where those radios are used.

TDFM-136: <http://til.ca/content.php?page=discontinued-tdfm-136A>

TDFM-138: <http://til.ca/content.php?page=tfm-138b>

Approved radios are IAW the IHOG. Any exceptions or limitations for a radio must be approved for cooperative use by the CAL FIRE Military Program manager.

EXHIBIT 9-1 National Guard Flight Crew "Mission Pack" Checklist

OES MSN # _____ **INCIDENT #** _____
AIRCRAFT RQST # _____ **CHALK #** _____

PC / AC _____ PI / FP/MP _____ CE _____

MEDIC _____ MFL: _____

DESTINATION _____

FREQUENCY AND CALL SIGN _____

BEFORE DEPARTING ENSURE THE FOLLOWING:

- 1. SAD Form 14 complete.
- 2. 7 blank copies of Form A in the logbook
- 3. You have a Military Helicopter Manager assigned to your aircraft.

MHEM: _____ PHONE # _____

MFL: _____ PHONE # _____

- 4. Your aircraft is equipped with the following kits:
 - Fly-Away Kit
 - For MEDEVAC, Medical Equipment (2X litters, extraction device, tag line, defibrillator, monitor, crash rescue extraction devices, 2X bottles of O2, MBITR radio for medic)
 - CAL FIRE frequency card
 - Ice Chest
 - Bucket and Bucket Repair Kit
- 5. Your aircraft is painted with the appropriate number and paint scheme.

- [] 6. Special tools for projected field maintenance and wifi for ULLS-A sync plan.

EXHIBIT 10-21 MHEM INCIDENT MOBILIZATION CHECKLIST

The following checklist must be used when mobilizing California National Guard Helicopter Units in support of federal and state incidents in California.

The following items are mandatory prior to the aircraft leaving the facility:

1. A Helicopter Manager is assigned to each helicopter
2. An Agency Aviation Military Liaison (AAML) is assigned for the activation
3. Helicopter is equipped with CAL FIRE radio
4. Helicopter is painted with High Visibility Water Paint and numbered per plan
5. Helicopter has current letter of approval in aircraft
6. All fire mission equipment must be on the helicopter, including fully-equipped fly away kits, Bambi bucket, handi-talkies, cell phones, any seating required for crew shuttle, etc.
7. One Fire Shelter per crew member.
8. California Interagency Military Helicopter Firefighting Program Operating Plan

Other Items to be considered for initial mobilization:

1. Order for helicopters has been properly initiating through North or South Ops. National Guard is informed of the order & request number and any federal management code for the incident.
2. Number of helicopters ordered is sufficient considering maintenance and crew changes.
3. Crew endurance tables (Pilot flight hours) and Aircraft maintenance schedules should be discussed including daily maintenance times and requirements.
4. If available, dedicated telephone/cell phone for National Guard and AAML use.
5. Identify any special equipment necessary for the intended mission, such as buckets, special sling equipment.
6. For Chinooks, if it appears that the assignment will last several days, consider ordering the rigid Simplex buckets stored at the Stockton AASF. When needed, the CMD will coordinate for line haul and movement of the buckets to fire incidents. The Agency Aviation Military Liaison assigned to the incident is the authority to activate these assets.
7. Maintenance contact teams may be ordered when the AAML and the LNO or OIC agree they are necessary. The Contact Team consists of one Technical Inspector and 3 or 4 mechanics with the equipment necessary for helicopter field maintenance.

8. Consider ordering military refueler trucks based on the incident location and fuel availability at the incident.
9. CMD Form As

Information needed prior to flying on incident:

1. Mission briefing for military flight crews
2. Frequencies, contacts and shift plans for the incident
3. Helibase parking is adequate for number and types of ships ordered Incident Maps and Hazard Maps available
4. Medical evacuation procedures and capabilities discussed.
5. Military and Fire agency chains of command (Organization Charts)
6. Performance Cards/Load Calculations completed. Manifests completed for all flights.
7. If MEDEVAC, copy of Exhibit 12-1 AAML Checklist and 12-2 MEDEVAC Dispatch
8. Name and Number of the TF Aviation Operations, MFLs and CMD JOC.

Upon arrival at the incident confirm:

1. Helicopter fuel is available or has been ordered. HEMTT(s) may be needed for fueling CMD aircraft.
2. Ground transportation for military flight crews is available or has been ordered
3. Sleeping and eating facilities have been arranged
4. Daily logs are kept, incident reports and aircraft pay documents completed.
5. Ensure air crew is ready to fly at the time the HEB1 dictates. If unable to meet the time line, discuss with the HEB1 realistic alternatives.

EXHIBIT 10-3: FORM A – DAILY AIRCRAFT SUMMARY

CNG Fires Aircraft Log Book Daily Report (Form A) V2.6

Submit daily to: MFL, and/or AASF/AVN TF. FORM Bs submitted to SAO Ops and the JOC Aviation LNO.

Flow: PIC -> MFL (QC) -> AV JOC LNO

(1) Date: (2) Mission #: (3) MFL: (4) PIC:

AIRCRAFT DATA

(6) CHALK: (7) FULL SERIAL #: (8) A/C TYPE: (9) Agency: (10) HOME FACILITY:

This form is for ONE airframe/chalk PER DAY

Aircraft Flight Leg DETAILS											Operational Data			
(11) Leg # / From	(12) To	(13) Incident #	(14) A/C Request # (ex: A-2)	(15) Incident Name or Flight Leg Remark	(16) Flt Hrs not charged	(17) Flt Hrs charged	(18) Total Flt Hrs Logged	(19) Standby Hours charged	(20) Reason Not charged standby time	(21) Sorties or # Drops	(22) Gallons Droppeds	(23) Cargo Lbs	(24) Passengers	
TOTALS (Handwritten)														
TOTALS					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

(25) Mandatory Comments:

<p>(26) PIC DATA:</p> <p>Rank/Name: <input type="text"/></p> <p>Home Facility: <input type="text"/></p> <p>Phone Number: <input type="text"/></p>	<p>(27) MHEM DATA:</p> <p>Name: <input type="text"/></p> <p>Phone Number: <input type="text"/></p>
---	--

<p>FUEL RECEIVED</p> <p>(28) If you are OTHER than CAABNG aircraft:</p> <p>Component/Agency: <input type="text"/> Gallons Received: <input type="text"/></p>	<p>Date & Signature: <input type="text"/></p> <p>Date & Signature: <input type="text"/></p>
---	---

Signatures imply flight logs, FORM As and CAL FIRE 63 complete, accurate and MATCH.

Form A Instructions:

- Start new sheet daily. Stays with the aircraft logbook until end of mission day.
- Fill in information for every fuel cycle or start/stop. May log a multiple stop ferry flight so long as still on the same Incident #.
- Data must be complete and match what is entered in the ULLS-A (-13) or Air Guard (781) system AND the CAL FIRE FORM 63.
- Bill CAL FIRE for crew/aircraft swaps flight time when approved by A,AML or SAO/Air
- Log, but do not charge for ferry flights or aircraft and crew swaps when approved as a training flight

<p>PIC/AC: <input type="text"/></p> <p>Crew: <input type="text"/></p> <p>Crew: <input type="text"/></p>	<p style="text-align: center;">CMD Aircrew Names (Rank, FN, LN) Authorized Hazardous Duty Fire</p> <p>Pilot: <input type="text"/></p> <p>Crew: <input type="text"/></p>
---	---

EXHIBIT 10-3 - DEBRIEF GUIDE & MISSION NARRATIVE

FIREFIGHTING MISSION NARRATIVE

(To be completed at the conclusion of the activation)

MANAGER (MHEM) _____ LIAISON (AAML) _____

ACTIVATION DATE _____ RELEASE DATE _____

UNIT _____ INCIDENT NAME _____

WHAT WENT WELL?:

WHAT PROBLEMS WERE ENCOUNTERED?:

WHAT CAN BE DONE TO PREVENT OR CORRECT THESE PROBLEMS?:

**Route Completed Form to the Agency Aviation Military Liaison.
AAML: report problems to Agency Program Manager.**

EXHIBIT 11-3 PROCESS FOR ACTIVATING NATIONAL GUARD HELICOPTERS

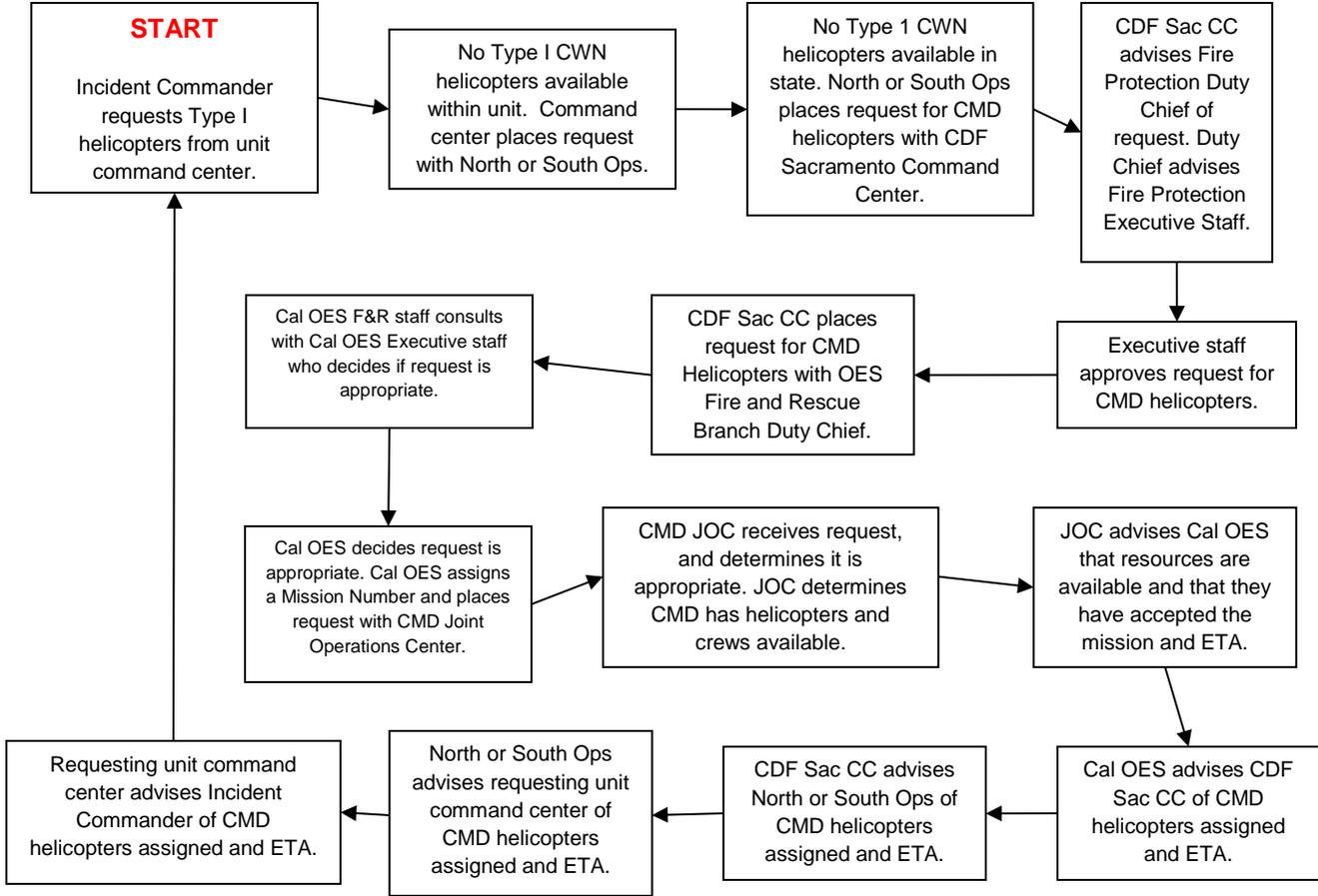


EXHIBIT 11-2 PROCESS FOR DEACTIVATING NATIONAL GUARD HELICOPTERS

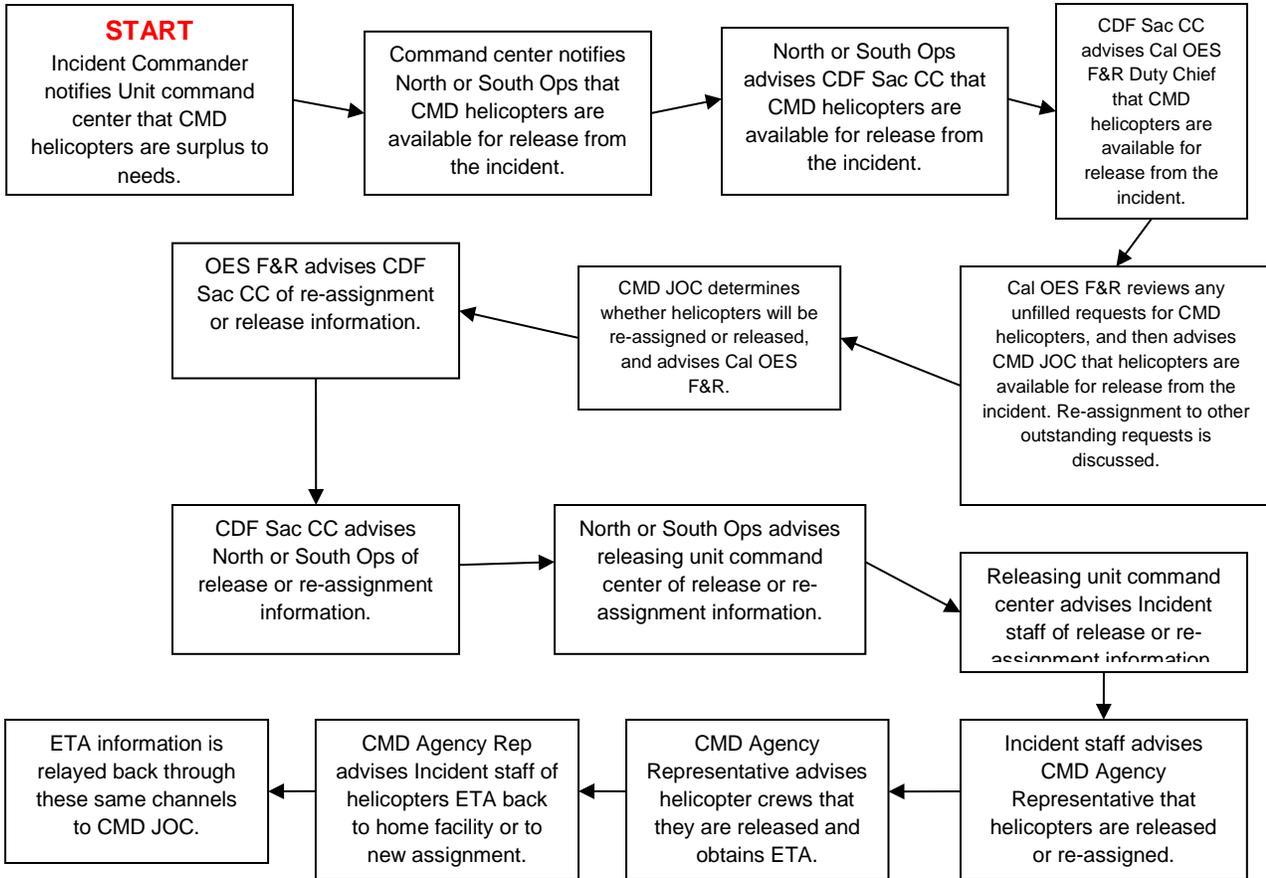


EXHIBIT 12-1 MEDEVAC AAML Checklist

Completed by the AAML supervising MEDEVAC. Completed for each Military PIC/AC. Submitted to:

- TAO Duty Officer
- AOBs for all incidences being supported
- TF Aviation Commander
- CMD JOC/J33
-

1. Date: _____ 2. Medevac Incident Number/Name: _____

2. AAML Completing This Dispatch Form / Cell #:

3. Current TAO Duty Officer:

4. PIC/AC Name(s) / Cell #:

CMD 24/7 JOC # 916-854-3440 in case Crew cannot be reached

5. Medic Name(s) / Cell #:

5a. Medic Certification Level: EMT-B, EMT-I, EMT-P, other? Advanced Trauma/Pre-hospital Life Saving training?

6. Aircraft Tail #(s), Chalk Number(s) and location stationed:

6a. Aircraft Shout Nano Tracking #:

7. Aircraft Duty Hours and After Duty Hours refuel plan?

8. Primary Hospitals identified for use? Do Helipads Support the Aircraft? Has coordination with the Hospitals' Emergency Department taken place?

9. Location, Duty Hours and agreed Day / Night Launch Times:

9a. Period 1, From _____ hour until _____ hour, crew located at _____ and the agreed response time is _____ Day/ _____ Night

9b. Period 2, From _____ hour until _____ hour, crew located at _____ and the agreed response time is _____ Day/ _____ Night

10. For aircraft maintenance or crew disruptions expected to last longer than _____ will or may generate a request for replacement crew or aircraft. Has this replacement plan been resourced by CAL FIRE and the CMD?

11. List all of the fires being covered: _____ IAPs for all?

12: Aircraft Mission Launch Procedures:

AAML Signature _____ Date _____

EXHIBIT 12-2 Dispatch Procedures for NG MEDEVAC Helicopter (Example)

California National Guard has provided 24/7 use of an NVG and hoist equipped, Black Hawk helicopter, call sign Guard 826. The flight crew includes at least one EMT-Paramedic, making this resource an Advanced Life Support (ALS) transport helicopter. Guard 826 will be located at North Ops, Redding Airport (RDD), and will be available for any request for emergency medevac assistance to firefighters in the Northern California "Area of Operations". The Area of Operations includes all state and federal units within the North Ops area. The helicopter and crew will be located at the Redding Jet Center hangars and offices at RDD, and logistically supported by Redding Air Attack Base and North Ops. IMTs or Units will assess the emergency and choose the appropriate mode of extraction and stabilization prior to requesting the medevac / hoist helicopter.

Dispatch Procedure

1. Incident or Agency contacts local ECC/Dispatch Center (ECC) & requests Medevac Copter
2. Local ECC will follow local protocol for nearest available rescue aircraft. If none are available and G826 is the closest, notify North Ops.
3. Requesting ECC builds a request for a Type 1 Standard Copter (special needs, NVG Hoist Medevac) in ROSS and places to North Ops
4. Unit/Forest will contact North Ops via the Intercom and make positive phone by calling North Ops @530-224-2466 and ask for the person dispatching the NVG Hoist Medevac Aircraft.
5. North Ops calls MHEM at 530-941-3063 with FC-106 and pertinent medevac dispatch information. See below
6. MHEM calls North Ops and advises if they will/will not accept the mission and if yes, ETD/ETA.
7. North Ops notifies SHU that G826 is readying for a mission, gives ETD/ETA and hands off flight following to SHU ECC.
8. North Ops calls appropriate agency Duty Chief with notification of use of G826.
9. North Ops notifies requesting ECC of fill information.
10. North Ops fills ROSS requests.
11. G826 follows standard incident flight following procedures, utilizing the ECC's en route to incident destination.
12. G826 notifies incident ECC of arrival at incident.
13. G826 notifies incident ECC of departure from incident, ETD/ETA and destination.
14. G826 follows standard incident flight following procedures, utilizing the ECC's en route to patient drop off.
15. Incident ECC notifies North Ops that G826 is released and ETD/ETA.
16. ECC releases Copter in ROSS.
17. G826 follows standard incident flight following procedures, utilizing the ECC's en route from patient drop off location to North Ops, closing out flight following with SHU.
18. G826 calls North Ops upon landing and notifies of status for next mission.

ONCC

Hoist Helicopter Protocol for 2014

California National Guard G826



Overview

California National Guard has provided 24/7 use of a NVG and hoist equipped, Black Hawk helicopter, call sign Guard 826. The flight crew will include at least one EMT-Paramedic, making this resource an Advanced Life Support (ALS) transport helicopter.

G826 is located at North Ops, Redding Airport (RDD), and will be available for any request for emergency medevac assistance to firefighters in the Northern California "Area of Operations". The Area of Operations includes all state and federal units within the North Ops area. The helicopter and crew will be located at the Redding Jet Center near North Ops, and logistically supported by North Ops. Local ECC's in consultation with cooperators and IMT's will order the closest available aircraft to meet the needs of the incident during daylight hours.

IMTs or Units will assess the emergency and choose the appropriate mode of extraction and stabilization prior to requesting the medevac/hoist helicopter.

Protocol

ALWAYS have the following information available PRIOR to placing the phone call:

- Location and description of Medevac Site (degrees, decimal minutes)
 - Latitude _____
 - Longitude _____
 - Elevation _____
 - Estimated Air Temperature _____
- Ground Contact _____
- Terrain description and hazards in the area (Get info from Ground Contact)
- Number of Patients and their priority/severity:
 - Number of Patients: _____
 - Severity: Mild _____ Moderate _____ Critical _____
 - Equipment needed i.e., hoist configuration, litter, etc. _____
- Radio Frequencies needed for Launching aircraft:
 - Incident TFR - Air to Air: xxx.xxx
 - Incident Ground Contact: CALCORD 156.0750
 - Incident Communications: Rx xxx.xxxx - Tx xxx.xxxx - Tone xx (xxx.x)
 - Guard Aircraft Emergency Contact UHF and VHF Frequency:

Now call the 24 hour Contact number:

- **Your Local Forest ECC (xxx) xxx-xxx**
 - The local ECC notifies North Ops via 530-224-2466 Duty Officer (this number is dedicated to the medevac operation at North OPS)

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EXHIBIT 12-3 HELICOPTER DIMENSIONS AND PAINT SCHEMES

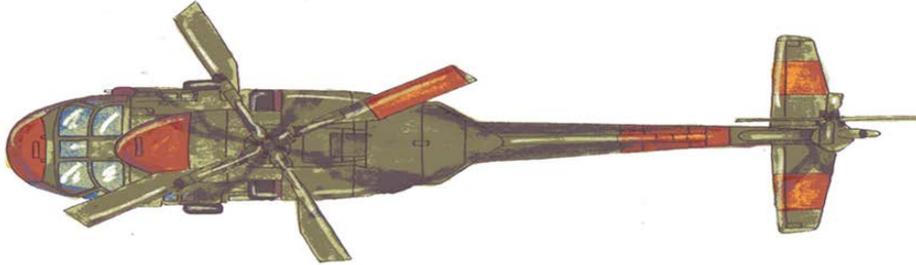
(Next Page)

Note: HH60 paintings follow UH60 examples, refueling probe painted as required.

OVERHEAD

BLADE STRIPES WILL BE 24" IN LENGTH AND WILL BE 6" OUT FROM THE BLADE GRIPS.

AIRCRAFT CAN BE PAINTED IN DIFFERENT HI-VIS COLORS TO CONTRAST WITH TOPOGRAPHIC FEATURES.



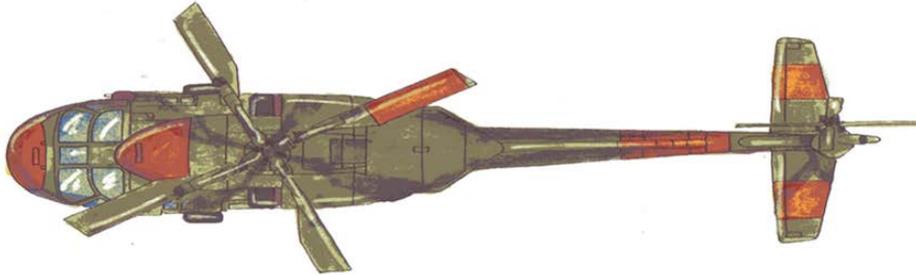
**UH-60 BLACKHAWK
DESIGNS BY FIRE CAPTAIN BRIAN ESTES**

UH-60 Paint Marking – Top View

OVERHEAD

BLADE STRIPES WILL BE 24" IN LENGTH AND WILL BE 6" OUT FROM THE BLADE GRIPS.

AIRCRAFT CAN BE PAINTED IN DIFFERENT HI-VIS COLORS TO CONTRAST WITH TOPOGRAPHIC FEATURES.



**UH-60 BLACKHAWK
DESIGNS BY FIRE CAPTAIN BRIAN ESTES**

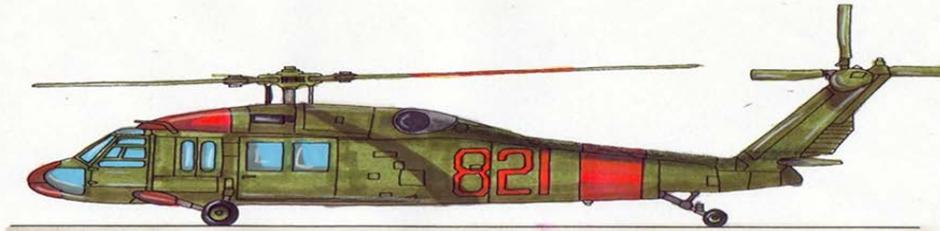
UH-60 Paint Marking – Top View

PROFILE

HIGH VISIBILITY NUMBERS APPLIED USING PRE-MADE STENCILS AND WASHABLE TEMPERA PAINTS

PAINTED NUMBERS ON FUEL NACELLES ARE APPROXIMATELY 3 FEET HIGH

AIRCRAFT CAN BE PAINTED IN DIFFERENT HI-VIS COLORS TO CONTRAST WITH TOPOGRAPHIC FEATURES.



***UH-60 BLACKHAWK
DESIGNS BY FIRE CAPTAIN BRIAN ESTES***

UH-60 Paint Marking – Left Profile View

HEAD ON

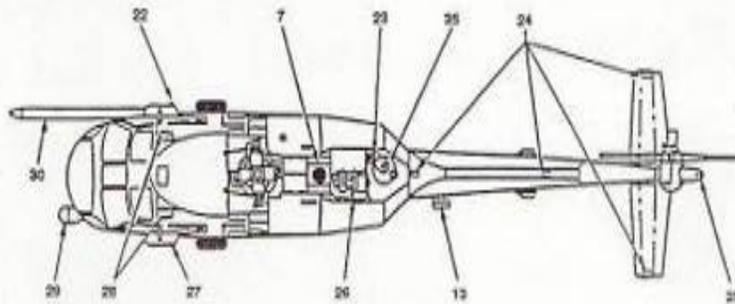
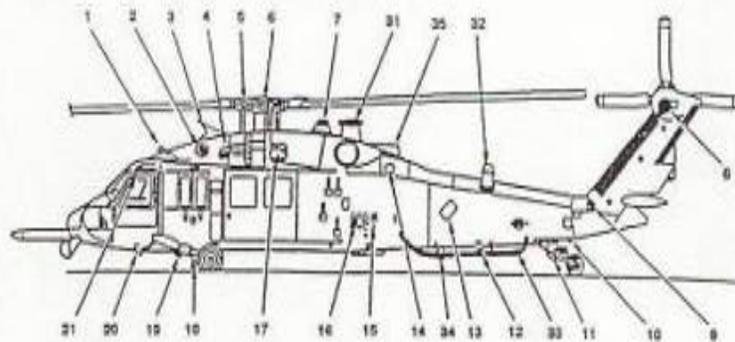
APPLICATION OF PAINT ON COWLINGS IS ACCOMPLISHED BY USING AIR LADDERS

AIRCRAFT CAN BE PAINTED IN DIFFERENT HI-VIS COLORS TO CONTRAST WITH TOPOGRAPHIC FEATURES.



***UH-60 BLACKHAWK
DESIGNS BY FIRE CAPTAIN BRIAN ESTES***

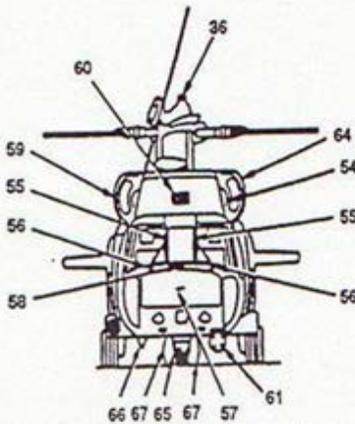
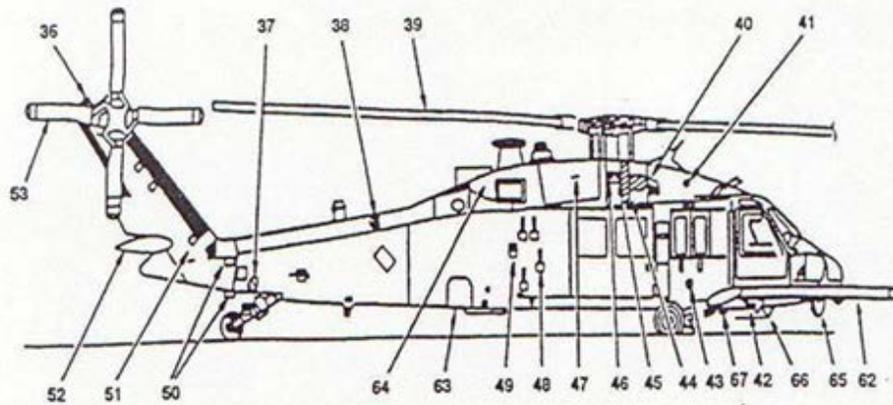
UH-60 Paint Marking – Head On View



- | | |
|---|---|
| <ol style="list-style-type: none"> 1. PITOT CUTTER 2. BACKUP HYDRAULIC PUMP 3. UPPER (ROTOR PYLON) CUTTER 4. NO. 1 HYDRAULIC PUMP AND NO. 1 GENERATOR 5. MAIN ROTOR BIFILAR 6. MAIN ROTOR HEAD 7. INFRARED COUNTERMEASURE TRANSMITTER 8. TAIL ROTOR GEAR BOX 9. INTERMEDIATE GEAR BOX 10. AFT MAINTENANCE LIGHT RECEPTACLE 11. TAIL LANDING GEAR DEFLECTOR 12. LOWER ANTI-COLLISION LIGHT 13. CHAFF DISPENSER 14. APU EXHAUST PORT 15. PNEUMATIC PORT 16. PRESSURE AND CLOSED CIRCUIT REFUELING PORTS | <ol style="list-style-type: none"> 17. NO. 1 ENGINE (SAME BOTH SIDES) 18. MAIN LANDING GEAR DEFLECTOR/CUTTER 19. LANDING GEAR JOINT DEFLECTOR 20. STEP AND EXTENSION DEFLECTOR 21. DOOR HINGE DEFLECTOR 22. RIGHT POSITION LIGHT (GREEN) 23. FIRE EXTINGUISHER BOTTLES 24. FORMATION LIGHTS 25. TAIL POSITION LIGHT (WHITE) 26. APU 27. LEFT POSITION LIGHT (RED) 28. PITOT TUBES * 29. RADOME * 30. AERIAL REFUELING PROBE * 31. SATCOM ANTENNA * 32. UPPER TACAN ANTENNA * 33. HF ANTENNA * 34. LOWER TACAN ANTENNA ** 35. GPS ANTENNA |
|---|---|

* AIRCRAFT MODIFIED BY TCTO 1H-60-546/588/614/615/637,
 ** AIRCRAFT MODIFIED BY TCTO 1H-60-614/615/637,
 *** AIRCRAFT MODIFIED BY TCTO 1H-60-593.

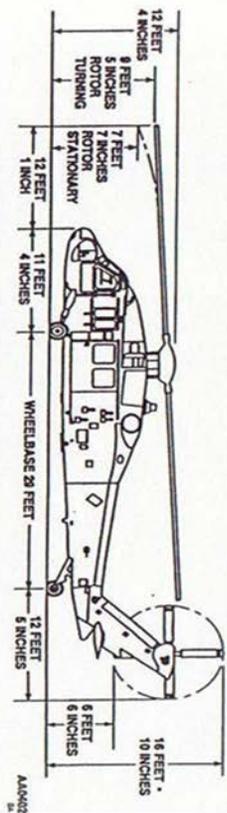
UH-60 Arrangement – Left Profile and Top View



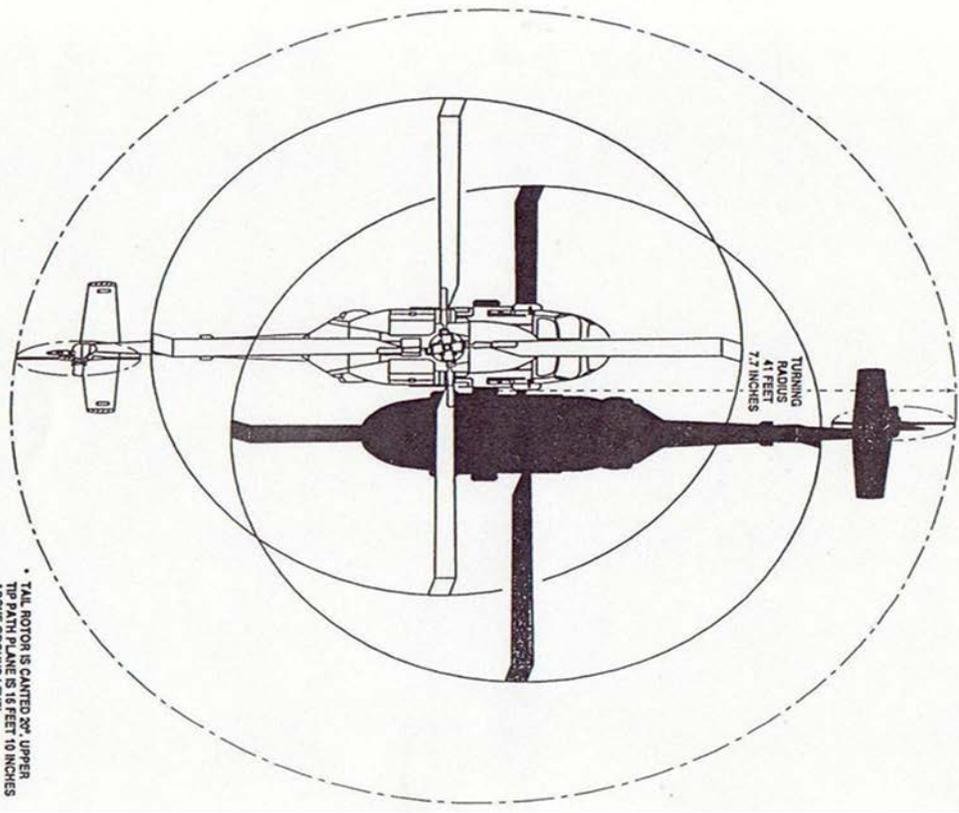
- 36. UPPER ANTICOLLISION LIGHT
- 37. TAILWHEEL STRUT
- 38. TAIL DRIVE SHAFT
- 39. MAIN ROTOR BLADE (FOUR)
- 40. NO. 2 HYDRAULIC PUMP AND NO. 2 GENERATOR
- 41. HEATER AIR INTAKE PORT
- 42. COCKPIT STEP (SAME BOTH SIDES)
- 43. EXTERNAL ELECTRICAL POWER RECEPTACLE
- 44. NO. 2 ENGINE
- 45. ICE DETECTOR
- 46. AMBIENT SENSE PORT
- 47. ENGINE FAIRING/WORK PLATFORM (SAME BOTH SIDES)
- 48. STEPS (SAME BOTH SIDES)

- 49. GRAVITY REFUELING PORT (SAME BOTH SIDES)
- 50. TAIL PYLON FOLD HINGES
- 51. TAIL PYLON SERVICE LADDER (SAME BOTH SIDES)
- 52. STABILATOR
- 53. TAIL ROTOR BLADE (FOUR)
- 54. ENGINE BAY AREA COOLING AIR INTAKE (SAME BOTH SIDES)
- 55. WINDSHIELD POST DEFLECTOR
- 56. WINDSHIELD WIPER DEFLECTOR
- 57. AVIONICS COMPARTMENT
- 58. OAT SENSOR
- 59. ICE DETECTOR
- 60. PYLON COOLING AIR INTAKE
- * 61. RADOME
- 62. AERIAL REFUELING PROBE
- 63. TRANSITION ELECTRONICS BAY ACCESS
- 64. HOVER IR SUPPRESSORS
- ** 65. FLIR TURRET
- ** 66. VHF-AM ANTENNA
- *** 67. LARS ANTENNA

UH-60 Arrangement – Right Profile and Head On



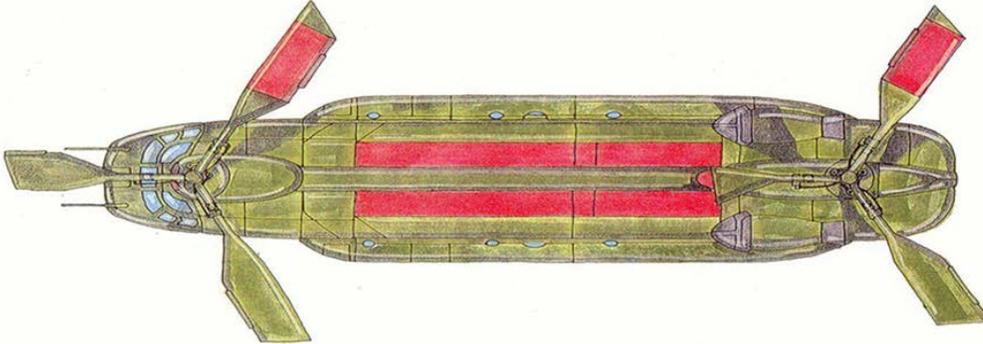
* TAIL ROTOR IS CANTED 20°. UPPER
 TIP PATH PLANE IS 16 FEET 10 INCHES
 ABOVE GROUND LEVEL.



UH-60 Turning Radius and Clearance

OVERHEAD

- DIRECTIONAL ARROW AT FRONT OF STRIPES TO ASSIST THE AIR ATTACK OFFICER WITH THE TRAVEL DIRECTION OF THE AIRCRAFT.
- AIRCRAFT CAN BE PAINTED IN DIFFERENT HI-VIS COLOR TO DIFFERENTIATE AIRCRAFT OR TO CONTRAST WITH VARIOUS TOPOGRAPHIC AREAS



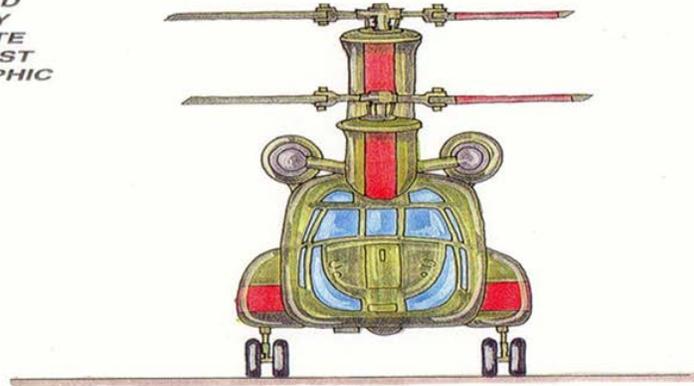
PAINT SCHEME DESIGNS
NATIONAL GUARD CHINOOK HELICOPTERS

DESIGNS BY BRIAN ESTES
BASELINE HELITACK

CH-47 Paint Marking – Top View

HEAD-ON

- APPLICATION OF PAINT TO COWLINGS IS ACCOMPLISHED BY USING AIR LADDERS.
- COLOR SWASHES ON BOTH COWLINGS ARE VISIBLE IN HEAD-ON VIEW.
- AIRCRAFT CAN BE PAINTED IN DIFFERENT HI-VISIBILITY COLORS TO DIFFERENTIATE AIRCRAFT OR TO CONTRAST WITH VARIOUS TOPOGRAPHIC AREAS.



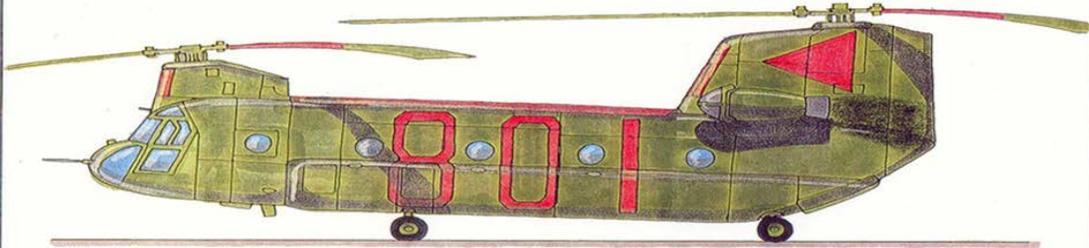
PAINT SCHEME DESIGNS
NATIONAL GUARD CHINOOK HELICOPTERS

DESIGNS BY BRIAN ESTES
BASELINE HELITACK

CH-47 Paint Marking – Head On View

PROFILE

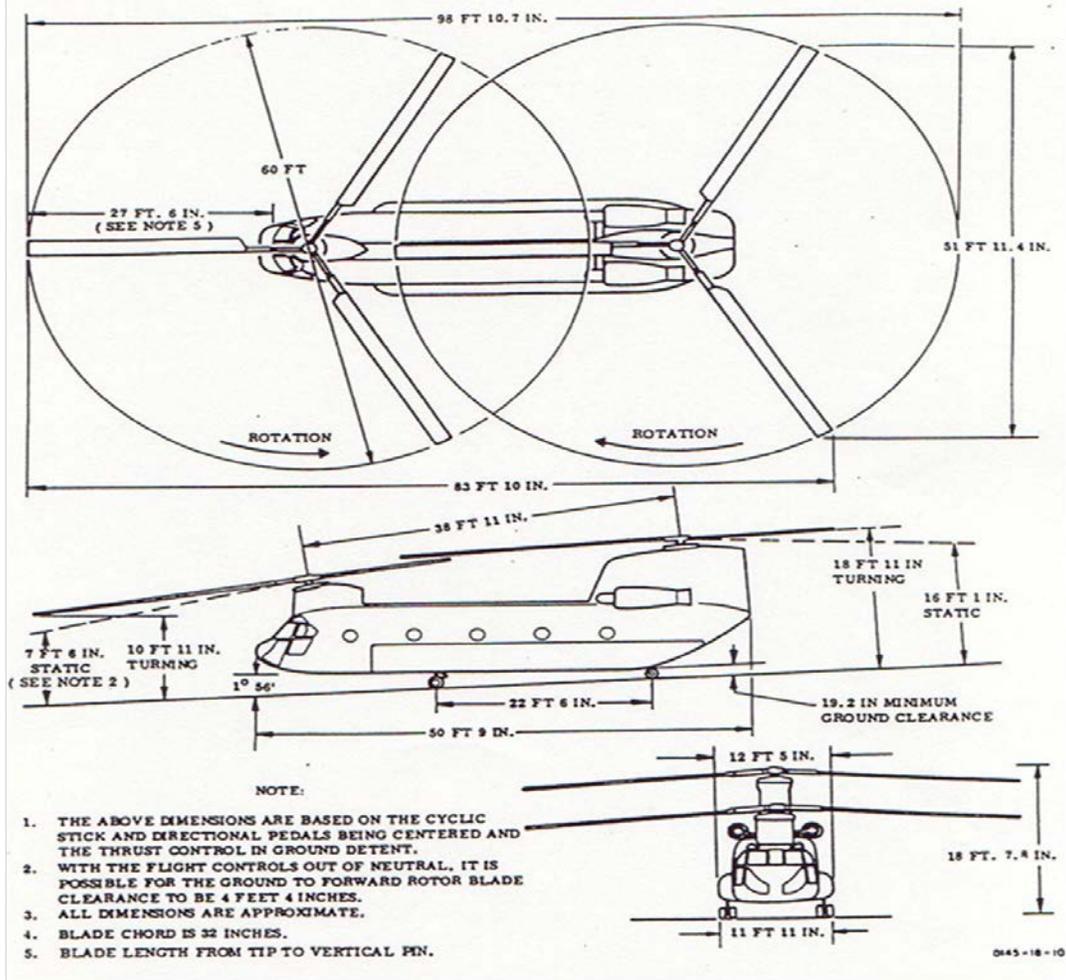
- PAINTED NUMBERS ARE APPROXIMATELY 6 FEET HIGH.
- TRIANGULAR SWASH ON REAR ROTOR MAST COWLING SERVES BOTH VISIBILITY AND DIRECTIONAL INDICATION.
- AIRCRAFT CAN BE PAINTED IN DIFFERENT HI-VIS COLOR TO DIFFERENTIATE AIRCRAFT OR TO CONTRAST WITH VARIOUS TOPOGRAPHIC AREAS



PAINT SCHEME DESIGNS
NATIONAL GUARD CHINOOK HELICOPTERS

DESIGNS BY BRIAN ESTES
BASELINE HELITACK

CH-47 Paint Marking – Left Profile View



CH-47 Dimensions and Clearance

EXHIBIT 13-1 SEI BAMBI HELICOPTER WATER BUCKET CHECKLIST
USE OF LARGE BAMBI BUCKETS WITH CH-47 "CHINOOK" HELICOPTERS

1. Operate IAW Army Air Worthiness Release.
2. The Bambi bucket can be loaded inside of the helicopter and flown to the fire, and then deployed by three crewmembers without shutting down. Deployment takes about fifteen minutes.
3. Use of the Bambi bucket with the CH-47 requires minimum of 200 feet by 200 feet clear of all structures and obstacles.
4. Adjustments to water capacity are made while the bucket is on the ground. Capacity can be adjusted to match the lifting limitations of the helicopter.
5. Split-drop capability is not available from the Bambi buckets currently provided to the California National Guard.
6. Because the Bambi bucket is not self-supporting (rigid), the only way a Bambi bucket can be loaded with water prior to departure from heliport is by filling from a dip tank.
7. Bucket oscillation during filling and prior to ground contact requires the CH-47 to remain airborne while attempting to arrest oscillation of the bucket. This increases risk to equipment and personnel in the landing area due to excessive rotor downwash.
8. Dipping from shallow water sources sometimes results in bottom debris being scooped into the bucket. Small rocks and mud pose a threat to ground personnel in the drop area.
9. Because of the cable length of the Bambi bucket, the helicopter is out of water effect during bucket filling.
10. After water is released, the bucket moves to about 45 degrees in trail, allowing better terrain clearance than with a rigid bucket.
11. Ground handling of the larger Bambi buckets requires a team of 10 personnel to move the buckets and slings. These buckets are heavy and cumbersome, and moving them by hand often puts personnel in awkward positions which could result in injury to the back and neck.
12. Once on the ground, the bucket can roll and tumble due to rotor downwash, fouling cables and striking objects and personnel in landing areas.
13. Field serviceability is limited. Operational failures require extended down time to determine the cause of the breakdown and to make repairs. Each "flyaway" kit contains an assortment of the most commonly needed repair parts. These parts can only be obtained from the manufacturer, SEI Corporation in British Columbia.
14. Airspeed with bucket in tow is limited to 100 mph.

15. Operational cost of bucket wear-and-tear is over \$80 per hour

OPERATING INSTRUCTIONS

All Models and Sizes

1. Preflight Inspection – POWER OFF

- **Inspect possible fraying of the support lines from the bucket to the hanger support and reel assembly.**
- Check the bucket for fraying of seams or holes that may have torn in the bucket.
- Check the bucket supports, attachment points, and hardware.
- Check all electrical cables and connections on bucket and aircraft.
- Conduct a full cargo hook preflight and function check.

2. Preflight Inspection – POWER ON

- Connect power to the bucket.
- While pulling on the release cable, check all water release switches by each crew position. Ensure the solenoid releases, resets, reels in, and locks into place after releasing water release buttons. Pilots check that the wiring modification does not interfere with flight controls.
- Route the electrical power lines above on the cabin ceiling, or on the floor to the cargo hook hole. Secure the wiring so it will not interfere with flying operations.
- Tape the power connection on the bucket so wind or personnel moving around in the cabin will not cause a disconnect. DO not over tape this connection. The connection should come apart with about 10 pounds of tension.

3. Connecting the bucket to the aircraft

- When attaching the bucket, (load hooked) attach the support and reel assembly so the smooth (front) side is facing forward.
- Extend the bucket support bracket out and ensure the Instant Deployment System (IDS) support is locked in position. The IDS should normally open on its own when it takes on water.

- Set the bucket up under the rotors facing the cargo hook with the chain supports and sandbag facing the ground. This will keep the bucket from rolling/flying around when making your initial takeoff to hover.

4. Bucket deployment

There are 2 ways to deploy the bucket

- Attach the bucket to the aircraft at initial takeoff and sling the bucket to the designated area of operations. This configuration puts a lot of drag on the aircraft and limits maximum forward airspeed (UH-60) to 140 knots at 30 degrees of bank, and 35 knots rearward flight. The bucket is stable when empty in forward flight but will put wear and tear on the support lines and sidewalls. Filling the bucket halfway will stabilize it during transition to and from the area of operations.
- Establish a LZ within the area of operation and connect the bucket. Remember to recheck connections and check operation of the release assembly.

5. Storing buckets

- Prepare bucket for storing by taping the support lines together with either flagging or masking tape (very light material). This will keep lines from kinking or twisting during the initial hover with the bucket empty.
- Lay bucket closed within the bucket bag, coil cables in a figure 8 on top of the bucket with the reel assembly on top, and close bag for storage.

EXHIBIT 13-2 CDF BASELINE-GRIFFITH RIGID HELICOPTER WATER BUCKET

OPERATING INSTRUCTIONS

The Baseline-Griffith bucket is a rigid 2,000 gallon Griffith helicopter water bucket that was significantly re-worked by CDF Heavy Fire Equipment Operator Dave Clevenger at Baseline Conservation Camp in Jamestown prior to the 2002 Fire Season. The result is a very versatile, efficient, and highly effective fire fighting tool that is easy to maneuver and which is now used by National Guard CH-47 pilots with ease and confidence. Dave has modified 4 Griffith buckets in this manner. Listed below are the operating features of this new design:

1. The principle of the operation of the Baseline-Griffith bucket is the use of pressurized nitrogen to activate the bucket dump valve, while at the same time utilizing the exhaust from the valve to pressurize the foam tank, using the same nitrogen twice.
2. All cables and fittings are uniform and interchangeable from bucket to bucket. They can be changed in the field in 15 minutes or less.
3. The nitrogen cylinder can be changed in 10 minutes. Each cylinder is good for about 250 drops. There are two cylinders for each bucket. The cylinder works a 32" diameter valve in the bottom of the bucket at a pressure of 160 psi. It will drop 2,000 gallons of water in 5.5 seconds with a footprint of about 800 feet long and 200 feet wide.
4. With the military CH-47 helicopter, these drops can be done from a higher altitude and at a faster speed than when using the Bambi bucket, which must be activated at a lower altitude and slower speed to get similar results.
5. The foam tank holds 45 gallons of solution, which is enough to mix for approximately 125 drops before refilling.
6. Specially-built bucket trailers have been designed to carry four nitrogen cylinders in specifically made racks for safe transport, a tool kit including spare parts, and 2 rigid buckets which are secured down with a special cradle and pins. These buckets will be stored at the Stockton AASF. When needed, the CMD will coordinate for line haul and movement of the buckets to fire incidents. The Agency Aviation Military Liaison assigned to the incident is the authority to activate these assets.
7. There are two simple steps to follow to hook up the bucket:
 - a) Hook up the sling to the CH-47
 - b) Plug in the power supply from the CH-47 to the bucket
8. The bucket is operated from a control head located inside the helicopter. The control head consists of a timer and two switches. One switch operates the water dump valve, and the other operates the foam concentrate injection valve. The timer is used with the foam switch to control the amount of foam concentrate that is injected into the bucket. Each switch has two lights: Red to indicate a closed valve, and Green to indicate an open valve.

9. A rack on the top of the bucket holds a nitrogen cylinder, a gas regulator and gauges, the foam tank, a foam tank pressure gauge, a relief valve, and the fill spout for the foam tank. The nitrogen gauges must be set at 160 psi, while the foam tank pressure gauge and pressure relief valve must be set at 15 psi.

(See Operating Instructions on the following page)

EXHIBIT 13-3 CDF BASELINE-GRIFFITH RIGID HELICOPTER WATER BUCKET

OPERATING INSTRUCTIONS**NOTE: UNDER NO CIRCUMSTANCES SHOULD THE BASELINE-GRIFFITH WATER BUCKET BE TRANSPORTED WITH THE FOAM TANK FULL OR WITH THE NITROGEN CYLINDER IN THE RACK**

The principle of the operation of the Baseline-Griffith bucket is the use of pressurized nitrogen to activate the bucket dump valve, while at the same time utilizing the exhaust from the valve to pressurize the foam tank, using the same nitrogen twice. Therefore the bucket dump valve must be tested twice to ensure that it is working correctly. By doing this you have now pressurized the foam tank so that it will operate correctly. All the operator must do is fill the foam tank and test the bucket dump valve.

- 1 The rack on top of the bucket holds the nitrogen cylinder, the gas regulator and gauges, the foam tank, the foam pressure gauge and relief valve, and the fill spout for the foam tank.
- 2 The right gas regulator gauge shows the pressure in the cylinder, and the left gauge shows the pressure in the outlet line. The outlet line pressure must be set between 150 and 160 psi, or the bucket dump valve will not work correctly.
- 3 The pressure for the foam tank must be set at 15 psi, and the relief valve must also be set at 15 psi.
- 4 In the bottom of the bucket is a gas-powered ram that operates the 32" diameter dump valve. This ram is powered by the nitrogen cylinder at the top of the bucket, and which also pressurizes the foam tank.
- 5 All Baseline-Griffith buckets use the same cable system. All cables are hooked together with a "hammerlock", which allows the cables to be replaced easy. And all parts are interchangeable between the Baseline-Griffith buckets. Four main cables and eight small guide cables are fastened to a sling, which is hooked to the CH-47. The cable assembly cannot be hooked directly to the CH-47.
- 6 When use of the rigid buckets is requested, a trailer with two buckets and a bucket support package will be sent to the incident for each 2 CH-47s that will be using these buckets. The bucket support package consists of 4 nitrogen cylinders, a repair kit, one forklift for unloading and loading and changing the nitrogen cylinders, and one light tower to provide lighting for nighttime maintenance, repairs, and security.
- 7 The repair kit contains tools to work on the buckets and extra cables, a spare ram regulator, and a spare solenoid. All specialized parts that could fail are included in the repair kit. Additional parts, if needed, can be found at most hardware stores. The bucket can be repaired and back in the air within 30 minutes using these tools and parts.
- 8 A forklift is required to unload the buckets from the transport trailer, to move them while they are on the ground, and to reload them on to the transport trailer. The CNG may be able to provide or the CAL FIRE hired equipment process can be used to obtain. It also aids in changing the nitrogen cylinders. By using a forklift, the helicopter can be in the air in ten (10) minutes, with bucket attached.

- 9 The heliport supporting the bucket operations should also be provided with a water tender. This tender can be used for crash fire protection, for dust abatement, and to wash the helicopters and buckets when necessary.
- 10 Bucket filling is not limited to dipping operations. The buckets can be filled on the ground with water, water-enhancing gels, or with long-term fire retardant. Sometimes this can reduce initial attack time by having the bucket filled at the same time that the cable assembly is being attached to the helicopter for the first sortie.
- 11 If use of foam is desired, the foam concentrate should be injected into the bucket while the helicopter is airborne.
- 12 During filling and ground contact (landing) the bucket is very stable. When filling from a deep water source the bucket will fill to capacity within 30 seconds.
- 13 Confined space landings are possible in an area as small as 50ft by 50ft. The CH-47 can set down a bucket and then move to one side and land within 20 feet of the bucket.
- 14 The maximum allowable load is calculated for each particular sortie. Elevation, temperature, pilot proficiency, ascent profile, fuel load, and wind are all factors that will be considered in determining maximum payload. The Baseline-Griffith bucket design allows water to be released in small amounts to compensate for changes in the operating environment.
- 15 If electrical or pneumatic energy is lost, the dump valve will automatically open and release the load without operator assistance.
- 16 Shallow-water filling is accomplished in an upright position. Feet on the bottom of the bucket prevent debris such as rock and mud from entering the bucket.
- 17 Minimal sling length allows good aircrew judgment and maneuverability of the aircraft above the terrain.
- 18 Rigid design allows buckets to be painted for easy aircraft identification at a distance.
- 19 This bucket has the capability to make any combination of drops from .5 gallons to 20 gallons per 100 square feet of coverage area. Varying coverage levels can be obtained by adjusting the speed and by skillful operation of the valve control.
- 20 Operational expense for use of the rigid bucket is only around \$20.00 per hour.
- 21 The nitrogen cylinder must be changed approximately every 250 drops. This requires a lifting device, such as a forklift to raise and lower the cylinders. It can also be accomplished by rolling the cylinders to and from an elevated platform, such as a pickup or stakeside bed.
- 22 After a water drop the bucket is affected very little by forward airspeed, and hangs underneath the aircraft while in flight. Therefore the aircraft must climb to avoid contact with terrain.
- 23 Airspeed with bucket in tow is limited to 120 mph. It can be flown long distances without sustaining damage.

UNDER NO CIRCUMSTANCES SHOULD THE BASELINE-GRIFFITH FIRE BUCKET BE TRANSPORTED WITH THE FOAM TANK FULL OR WITH THE NITROGEN CYLINDER IN THE RACK

EXHIBIT 13-4 PORTABLE FOAM INJECTION SYSTEMS FOR ARMY NATIONAL GUARD CH-47 HELICOPTERS

Military rotary wing aircraft operating on fire suppression missions can be equipped with portable foam injection systems. When used properly, they will produce optimum suppression results.

CH-47 Chinook helicopters are provided with gravity flow system which consists of a storage tank of approximately thirty gallons. A 5/8 inch garden hose adapter is provided at the flow valve to dispense the agent into the bucket. The Chinook helicopters have the option to fly one of two types of buckets: Bambi or Simplex. Regardless of the bucket type or capacity, it is recommended that the foam container be filled prior to flight. Normally, twenty-five gallons of foam will be adequate for a fuel cycle.

The amount of foam concentrate that is dispensed into the bucket prior to a drop is dependent on several factors. The amount of "bonding" of diluted concentrate on the bucket wall from previous drops, the PH of the water, water temperature, salt or fresh water, and the amount of suspended matter or particulate in the water will all effect required foam concentrate amounts. Regardless of the "condition" of the water, it is the responsibility of the MHEM, based on personal judgment and experience, to dispense the proper amount of foam concentrate per drop based on the tactical objective on the fireground.

A skim milk (watery white) appearance will usually yield a wet foam which is best suited for mop-up and/or in windy conditions. The "richer" (thick white appearance) the finished product in the bucket, the drier the foam, which is advantageous for direct attack on the fire's edge. Like long-term retardants, the foam should be applied just outside the fire's edge in the "green", not challenging the fire's convected heat

Each drop should be evaluated for effectiveness. Using the previous drop's effect on the task, adjustments in the amount of concentrate will improve the effectiveness of subsequent drops.

Although wildland fires are the primary scope of military helicopter firefighting operations, it should be remembered that Class A foam can effectively intervene in fires involving tires, without producing "runoff" problems.

Post-earthquake structural fire protection can be accomplished by aerial delivery of foam-enhanced water applied directly on to burning structures, or on to adjacent structures as an exposure measure.

EXHIBIT 14-1 FLY AWAY EQUIPMENT KIT INVENTORY CHECKLIST

SUPPORT KIT #	U/M	MINIMUM QUANTITY	INVENTORY PART/SERIAL #	INSPECTED (X)	RE-ORDERED (X)	AAML/MHEM INITIALS
Heavy-Duty plastic container	ea	1				
Duct tape	ea	1				
Masking tape	ea	1				
Electrical tape	ea	1				
Flagging tape	ea	3				
Grommet kit	ea	1				
Electrical crimping tool	ea	1				
Electrical plugs: male/female	set	2				
Wires ties	bag	1				
Stainless steel wire	roll	1				
32 oz. spray bottle	ea	1				
Plexiglass cleaner/polish	can	1				
Sealing compound	set	1				
All purpose wipes	box	1				
Cleaning rags	bag	1				
Shackle assembly	ea	1				
Recoil assembly	ea	1				
Release cable	ea	1				
Cord w/hardware	set	1				
FLIGHT KIT #						
Flight helmet bag - black	ea	1				
SPH-5 Flight helmet	size	LG or XL				
Approved Personal Flotation (PFD)	ea	1				
CEP hearing kit w/extra foam tips	set	1				
Flight Gloves size - 09	pr	1				
size - 10	pr	1				
size - 11	pr	1				

size - 12	pr	1				
Harness w/anchor (CH-47s)	ea	1				
Carabiner - steel	ea	1				
Forms Binder	ea	1				
CA Interagency Mil. Helo Program Handbook	ea	1				
Fire Shelters	ea	1 per person				
California Atlas	ea	1				
Sectionals for LA, SF, K Falls	set	1				
Statewide Radio Plan	ea	1				
Technisonic frequency chart	ea	1				
Technisonic programming guide	ea	1				
King HT frequency chart	ea	1				
King HT-210 ch. EPH w/batteries	ea	1				
Cellular Phone w/ charger and HF kit	ea	1				
PAINT KIT						
Paint case/bag	ea	1				
Paint - pint bottles	ea	8				
Paint rollers handles - 3" wide	ea	3-4				
Paint roller refills	ea	6-8				
Paint brush - disposable	ea	2				
Roller pans - disposable	ea	4				

EXHIBIT 15-1 MHEM COURSE REQUIREMENTS

COURSE OUTLINES

COURSE TITLE: MILITARY HELICOPTER MANAGER

COURSE OBJECTIVES: To inform students regarding...

- a) Roles, Duties, Responsibilities of Military Helicopter Manager
- b) Demonstrate knowledge and understanding of California Interagency Military Helicopter Operating Plan.
- c) Implement interagency policy and procedure during Military helicopter firefighting operations.
- d) Demonstrate proficiency of aerial firefighting strategy and tactics
- e) Contribute to safe, effective, efficient flight operations by applying Air Crew Coordination techniques

COURSE CONTENT:.....27 HOURS

UNIT 1 – HELICOPTER WATER EMERGENCY EGRESS TRAINING/ WATER SURVIVAL	5:00
UNIT 2 –FINANCE AND PROCUREMENT	4:00
UNIT 3 –OPERATING PLAN OVERVIEW	1:00
UNIT 4 MILITARY HELICOPTER MANAGER DUTIES START TO FINISH	2:00
UNIT 5 –AIR CREW COORDINATION AND CREW RESOURCE MANAGEMENT	2:00
UNIT 6- PASSENGERS, HAZARDOUS MATERIAL AND CARGO	1:00
UNIT 7- LOAD CALCULATIONS	1:00
UNIT 8- RADIO USE	1:00
UNIT 9- FLIGHT OPERATIONS	8:00
REVIEW/EVALUATION	1:00
FINAL EXAM.....	1:00

TEXTS & REFERENCES:

- California Interagency Military Helicopter Firefighting Program Manual
- Cal Fire 8300 procedures manual
- Cal Fire 8100 procedures manual
- Interagency Helicopter Operating Guide (IHOG)
- ICS 420-1 Field Operations Guide

- NFES 2175 Military Use Handbook
- Cal Fire Helicopter Short Haul Rescue Manual

COURSE TITLE: MILITARY AVIATION FIREFIGHTING FLIGHT CREW TRAINING

COURSE OBJECTIVES: To inform students regarding...

- a) Roles. Duties, Responsibilities of Military flight crews
- b) Demonstrate knowledge and understanding of California Interagency Military Helicopter Operating Plan.
- c) Implement and operate within interagency policy and procedure during aerial firefighting operations.
- d) Demonstrate proficiency of aerial firefighting strategy and tactics
- e) Integration of agency fire personnel into air crew coordination and flight operations.

COURSE CONTENT:.....10-17 HOURS

UNIT 1 – OPERATING PLAN OVERVIEW	1:00
UNIT 2 –FIRE TRAFFIC AREA (FTA).....	1:00
UNIT 3 –ICS 100	1:00
UNIT 4- STRATEGY AND TACTICS.....	1:00
UNIT 5 –RADIO USE	1:00
UNIT 6 –AIR CREW COORDINATION	1:00
UNIT 7 –LOAD CALCULATIONS.....	1:00
UNIT 8- FLIGHT OPERATIONS	1:00-8:00(PROFICIENCY BASED)

REVIEW/EVALUATION	1:00
FINAL EXAM.....	1:00

TEXTS & REFERENCES:

- California Interagency Military Helicopter Firefighting Program Manual
- Cal Fire 8300 procedures manual
- Cal Fire 8100 procedures manual
- Interagency Helicopter Operating Guide (IHOG)
- ICS 420-1 Field Operations Guide
- NFES 2175 Military Use Handbook

EXHIBIT 16-1 EMPLOYEE CONDUCT

EMPLOYEE CONDUCT 1080

(No. 50 October 1998)

EMPLOYEE RULES OF CONDUCT, UNIFORMED EMPLOYEES 1081

(No. 50 October 1998)

Each uniformed CAL FIRE employee is expected to understand and follow the Employee Rules of Conduct, Form PO-31, which is to be included in the orientation packet given to new employees. Each uniformed employee will sign, date, and return the form to his/her unit personnel office. The signed form will be kept in the employee's official personnel file.

The uniformed employee rules of conduct are as follows:

1. Possession of firearms, nonlethal chemical agents, or any deadly weapon by state personnel is forbidden on state property. The only exceptions to this rule will be CAL FIRE peace officers designated by the Director pursuant to PRC 4156.
2. The use of intoxicating beverages or dangerous and restricted drugs during work or standby time, or appearing on the job or at stations under their influence, will be considered grounds for immediate adverse action.
3. Intoxicating beverages and dangerous or restricted drugs will not be brought into state camps, barracks, offices, or buildings, nor carried in official vehicles.
4. All personnel residing in barracks are expected to conduct themselves in a manner that recognizes their responsibility for common courtesy and consideration to others that share the facility. Everyone is expected to be appropriately quiet after lights out.
5. Employees are expected to meet grooming and uniform standards and present a neat, clean, well-groomed appearance at all times. Occasional dirty work is not an excuse for lack of personal cleanliness.
6. Buildings and grounds will be kept neat, clean, and attractive at all times. Beds will be made up in military style each morning before work and will be kept in a neat condition when not in use.
7. There will be no loitering in the kitchen. State-provided food will not be taken from the kitchen or storeroom for individual consumption.

8. Meals will be served promptly at designated hours except when fires or other emergencies justify a departure from schedule.
9. State property must be used properly and accounted for. Employees have a personal responsibility in the use and care of tools and equipment. Tools will be cleaned and returned to their proper places after use.
10. Lawful orders of supervisors will be obeyed promptly.
11. Both male and female employees will be accorded socially acceptable privacy in both barracks and field environments. Employees will always respect the rights and privacy of others. This will include:
 - Separate use of restrooms or shower facilities;
 - Appropriate attire for sleeping, exercising, changing into safety clothing or other regular activities where the regular uniform is not required; and
 - In areas where both men and women are present, nudity will not be permitted.
12. Interpersonal relationships during work and standby time are expected to conform to accepted standards of professional conduct free from sexual harassment or displays of affection.
13. The use of vulgarity, sexually suggestive comments or gestures, whether intended to be offensive or not, the display of explicit obscene photographs, pictures or posters or the use of any audio/visual equipment to produce such vulgarity will not be permitted.

APPENDIX A – GLOSSARY OF ACRONYMS AND ABBREVIATIONS

GLOSSARY

Of Acronyms and Abbreviations

AASF	Army Aviation Support Facility
AAML	(CAL FIRE) Agency Aviation Military Liaison
AC	(Military) Aircraft Commander
ADF	Automatic Direction Finder
AFTP	Additional Flight Training Period
AIR ATTACK	(Fire Agency) Air Tanker/Fixed Wing Coordinator: works for the Air Operations Branch Director: coordinates air traffic at an incident with large number of aircraft assigned.
ALSE	Aviation Life Support Equipment
AM	Amplitude Modulation
AMC	(Military) Air Mission Commander
AMU	CAL FIRE Aviation Management Unit
ANG	Air National Guard
AOBD	(Fire Agency) Air Operations Branch Director: works for the Operations Section Chief; prepares the Air Operations portion of the Incident Action Plan (IAP); conveys plan strategy to the ATGS; ensures logistical support for helibases and a liaison to the airtanker bases operating on the incident.
ARNG	Army National Guard
AR	Air Refueling. The HH-60G Pave Hawk can be in-flight refueled from an HC/MC-130P aircraft
ASGS	(Fire Agency) Air Support Group Supervisor: Supports and manages helibase operations and functions as a liaison with fixed wing airtanker bases.
ASSIGNED	When a military helicopter already on Activation status and is given an Incident Number and is dispatched to a specific fire.
ASM	(Fire Agency) Air Supervision Module: Lead Plane Pilot and Air Tactical Group Supervisor in the same aircraft; coordinates and directs aircraft assigned to an incident, and can lead airtankers over the target.
ATGS	(Fire Agency) Air Tactical Group Supervisor: Responsible for coordination and direction of all aircraft assigned to an incident
AVCRAD	(Military) Aviation Classification/Repair Depot
AWR	Air Worthiness Release

BLM	U.S. Department of Interior, Bureau of Land Management
CAL FIRE	California Department of Forestry and Fire Protection
CE	(Military) Crew Chief: Air Force: The aircraft mechanic responsible for day to day maintenance operations and the coordinator for specialized maintenance work. The crew chief is not part of the aircrew. Army: is part of the aircrew, responsible for day to day maintenance Operations.
CMD	California National Guard. Combined, the Air National Guard and Army National Guard, two separate and distinct organizations, make up the California National Guard or "The Guard".
CP	Co-pilot, not necessarily at the controls. See PI.
CWN	(Fire Agency) Call-When-Needed helicopters
DAG	(Military) Deputy Adjutant General
DEACTIVATED	Point in time when an aircraft is released from fire assignment, demobilized and Cal OES is to close the mission request tasking.
DME	Distance Measuring Equipment. Part of the TACAN radio that provides exact distance from TACAN or VOR/DME ground transmitters. It can also provide exact distance from another cooperating aircraft with similar equipment in the air-to-air mode.
DO	(Military) Director of Operations
DOD	Department of Defense
DSB	Double Side Band. A side band in the High Frequency (HF) range
ECC	(Fire Agency) Emergency Command Center
ETA	Estimated Time of Arrival
ETD	Estimated Time of Departure
EERA	(Fire Agency) Emergency Equipment Rental Agreement
FAA	Federal Aviation Administration
FAF	Federal Air Field
FE	Flight Engineer
FLIR	Forward Looking Infrared Radar. The HH-60G Pave Hawk has a thermal imaging camera on the nose of the aircraft and a TV type screen in the cockpit. This can be used for night vision or to see the thermal image of hot spots on the ground.
FM	Frequency Modulation
FMC	Fully Mission Capable. All the equipment required for the mission is operational on the aircraft

FS	U.S. Forest Service
FTA	(Fire Agency) Fire Traffic Area: This is the fire incident airspace. It extends out 5 nautical miles from the perimeter of the fire, and at least 2500 feet AGL or 1000 feet above airtanker orbit elevation.
GACC	(Fire Agency) Geographical Area Command Center: Regional Interagency fire dispatch center.
GPS	Global Positioning System. A satellite-based precision navigation system that is accurate to within a few feet.
HAR	Air Refueling. The HH-60G PAVE HAWK can be refueled inflight from an equipped C-130 aircraft (e.g., HC/MC-130P).
HEB1	(Fire Agency) Helibase Manager: Manages all activities at Helibase.
HLCO	(Fire Agency) Helicopter Coordinator: Coordinates tactical and logistical helicopter missions on a complex incident. Works for the ATGS.
HEMTT	(Military) Heavy Expandable Mobile Tactical Truck (2500 Gallon-Helicopter Fuel Tender)
HIRRS	Hover Infrared Suppression System. An engine exhaust deflection system. The engine power available increases by 1% with the baffles removed.
HF	High Frequency
IA	(Fire Agency) Initial Attack
IAW	(Military) In Accordance With
IC	(Fire Agency) Incident Commander
ICS	Incident Command System
IFR	Instrument Flight Rules
IGE	In Ground Effect. This is when a helicopter is hovering at a height above the ground that is lower than the equivalent of one rotor diameter and is gaining the benefit of the ground cushion of air under the helicopter. The lower the hover height, the lower the power required to hover.
IHOG	(NWCG) Interagency Helicopter Operating Guide
IMC	Instrument Meteorological Conditions
IP	(Military) Instructor Pilot
IP	(Fire Agency) Initial Point is a geographical assigned location identified by the Air Tactical Group Supervisor or Helicopter Coordinator in close proximity to the incident air space.
JOC	(Military) Joint Operations Center
KIAS	Knots Indicated Airspeed
LNO	(Military) Military Liaison Officer: is a designee of Higher Headquarters to fill an information gathering/sharing role.
MEDEVAC/ CASEVAC	Use of aircraft to immediately remove fireline personnel from immediate fire area to an advanced treatment facility.

LPU	Life Preserver Unit (floatation)
LZ	Landing Zone
MC	Mission Commander
MFL	Military Field Liaison: is a rated crewmember, not assigned to a flight crew, designated by the State Aviation Officer to assist the flight crew, manage aviation maintenance and refuel personnel, and serve as liaison to CAL FIRE personnel, the Army Aviation Support Facilities and the SAO.
MHEM	(Fire Agency) Military Helicopter Manager
MLCO	Military Helicopter Coordinator: (Fire Agency) Personnel staffing a Helicopter Coordinator position in order to coordinate the tactical and logistical helicopter missions assigned to Military helicopters on a complex incident. Works for the ATGS or HLCO.
MMC	(Military) Military Mission Commander.
MO	(Military) Aircrew medic
MOC	Maintenance Operational Check
North Ops	(Fire Agency) second-level interagency fire dispatch center for Northern California. Also known as OCC.
NCO	(Military) Non-commissioned Officer.
NPS	U.S. Department of Interior, National Park Service
NVG	Night Vision Goggles
NVS	Night Vision System
OAT	Outside Air Temperature
OCC	(Fire Agency) Operational Command Center: Second-level interagency fire dispatch center. There are two: North Ops and South Ops.
OGE	Out of Ground Effect. This is when a helicopter is hovering at a height above the ground that is higher than the equivalent of one rotor diameter and is not gaining the benefit of the ground cushion of air under the helicopter. The higher the hover height, the higher the power required to hover.
OIC	(Military) Officer-in-Charge
OTAG	(Military) Office of the Adjutant General
OPLAN	Operation Plan to the Interagency Agreement (Exhibit 1)
PC	(Military) Pilot-in-Command
PFD	Personal Flotation Device
PI	(Military) Pilot, same as co-pilot who is at the controls. See CP.
PJ	U.S.A.F. Para-rescue man. Qualified paramedic, air crewman, parachutist, scuba diver, and mountain rescue climber.
POL	(Military) Petroleum/Oil/Lubricants
RELEASED	When an aircraft is taken off a fire awaiting reassignment or deactivation.

SAR	Search and Rescue
SAC ECC	CAL FIRE Headquarters Command Center (Sacramento)
SOC	(Military) Squadron Operations Center
SOP	Standard Operating Procedure
SOUTH OPS	(Fire Agency) Second-level interagency fire dispatch center for Southern California. Also known as OCC.
TACAN	(Military) Tactical Air Navigation. A military radio receiver used for IFR navigation.
TAG	(Military) The Adjutant General
USAF	United States Air Force
USFS	U.S. Department of Agriculture, Forest Service
VFR	Visual Flight Rules
VOR	VHF Omni-Directional Range. A radio navigation system for flying IFR.