In 1993, Cal OES made the decision to adopt the California Department of Forestry and Fire Protection Model #18 buildup as our standard fire engine. This started with Cal OES #253 and continues through Cal OES #313. Listed below are a number of benchmarks that identify how Cal OES fire engines have evolved over the past ten years.

**Cal OES #253-256**

**HME SFO four door custom cab/chassis – Type 1**

- 1000 gpm Darley midship pump, PTO driven booster pump
- Cummins 6C8.3-300 turbocharged diesel motor, 300 HP
- Allison World Transmission, with Allison Retarder
- 750 Gallon Water Tank
- FoamPro 2001 Class A Foam System
- Second set of highside compartments
- Hydraulic ladder rack
- Lightweight, corrugated hard suctions
- 3” poly-lined, light weight, synthetic hose, with 2 ½” couplings
- 1000 GPM fog nozzle as well as stacked tips for deck gun
- Scene lighting package with 2500 watt generator
- Type 3 (light) Urban Search & Rescue equipment package

**Cal OES #257-265**

**Freightliner Two Door Conventional Cab/Chassis – Type 2**

Same buildup and equipment as listed above, with the following exceptions:

- Motor upgraded to Cummins C8.3-325 Turbocharged Diesel Motor, 325 HP
- Waterous midship and PTO driven booster pump
- Ladders in tunnel in water tank
- Rollup compartment doors
- Generator upgraded to 3500 Watts
- Power Arc NFPA compliant emergency lighting package
- Arrow Stick added to rear
HME SFO Four Door Custom Cab/Chassis – Type 1

Same buildup and equipment as above, with the following exceptions:

- Motor upgraded to Cummins ISL – 330 HP turbocharged diesel
- Output retarder eliminated – replaced with Jacobs engine brake
- Electronic Federal E-Q2B siren added
- PTO Booster Pump eliminated – replaced with diesel powered 100 gpm auxiliary pump

Due to the increased capabilities of these units, there are some operational, as well as logistical issues that must be addressed by engine assignees. These issues fall into three areas: Maintenance, Resupply, and Staffing.

MAINTENANCE

**Class A Foam System** - the inclusion of the Class A Foam System requires extra maintenance in terms of monthly inspection and cleaning of foam screens, and yearly draining and refilling of pump oil with SAE 30 weight non-detergent oil. The instructions for both operation and maintenance of the Class A Foam System can be found in **FOAMPRO FORM # 820, SYSTEM 2001 INSTALLATION & OPERATION MANUAL** furnished with the unit.

**Generator** - consult **Honda Power Equipment Owner’s Manual EB2500X**, Page 26, for maintenance schedule for after each use, monthly, quarterly, semiannually and yearly required maintenance. Pay particular attention to checking the Ground Fault Circuit Interrupter for proper operation prior to each use.

**Chain Saw** - consult **STIHL Owner’s Manual**, page 24 for fuel mixing (brand name unleaded gasoline and STIHL two stroke engine oil @ 50:1). Chain oil should be SAE 30.
RESUPPLY
Certain items associated with both the Class A Foam System and the US&R Cache will either need to be replaced or resupplied as they wear out or are consumed. The following list reflects these items and responsibility for replacement or resupply:

<table>
<thead>
<tr>
<th>Item</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A Foam Concentrate*</td>
<td>Engine Assignee</td>
</tr>
<tr>
<td>2 cycle oil / bar oil</td>
<td>Engine Assignee</td>
</tr>
<tr>
<td>US&amp;R software</td>
<td>Engine Assignee / Cal OES**</td>
</tr>
<tr>
<td>Life Safety Ropes</td>
<td>Engine Assignee / Cal OES***</td>
</tr>
<tr>
<td>Trauma Kit</td>
<td>Engine Assignee</td>
</tr>
<tr>
<td>DOT First Aid Kit</td>
<td>Engine Assignee</td>
</tr>
</tbody>
</table>

* FoamPro recommends that only the following Class A Foam Concentrates be used in their systems: Angus FOREXPAN Forestry Foam, Ansul SILVEX, FIRETROL 103 and 103B, FIRETROL 104 (for cold temperature applications), MONSANTO 881, and Aftaris Phos-Chek. **DO NOT USE ANY OTHER PRODUCTS IN THE FOAMPRO SYSTEM.**

** Damage - If damaged on a local government incident, assignee replaces; if damaged on a state mobilization, Cal OES replaces.

*** Damage - If damaged on a local government incident, assignee replaces; if damaged on a state mobilization, Cal OES replaces.

*** Worn Out – Cal OES replaces.

Assignees shall comply with all requirements of NFPA 1983, Standard on Fire Service Life Safety Rope and System Components, 1995 Edition. Rope Record Logs shall be kept on all life safety ropes and rope reuse shall be permitted only after the conditions as set forth in NFPA 1983, Section 3-6.1.2 have been met.

STAFFING
In order to utilize the Type 3 US&R tool complement and to meet ICS typing, all personnel staffing this unit shall have successfully completed Rescue Systems I as certified by the California State Fire Marshal, or have completed an equivalent course that meets or exceeds Rescue Systems I Curriculum.