



BEAR-PROOF FOOD LOCKERS

Lester A. Sinclair—Landscape Architect

Background

Bears have always been synonymous with food in picnic areas and campgrounds in forest recreation areas. Efforts to keep bears away from campground sites where food is present has always been difficult; and the conflict between people and bears will continue unless there is some way to keep food away from bears. The ideal solution is to keep all bears away from food, thus eliminating the possibility of bears developing a habit of seeking out food brought in by the public.

A food locker that has been used in the past on several forests was originally developed by the National Park Service (NPS) and this locker is still being used in many campgrounds in the west (figures 1 and 2). The current NPS steel food locker is approximately 20-in x 20-in x 48-in (0.5m x 0.5m x 1.2m) and stores approximately 10 cf (0.3m³). The food locker is traditionally set on the ground and bolted to a concrete base. Two chained swivel eye-bolt snaps are used to lock the door. This method has met with some success, but there have been inherent problems with the food locker design.

A food locker attached to a concrete pad directly on the ground requires the user to bend down to open the door. The door opens towards the user's feet and, in the past, this has caused injuries. The food lockers are also difficult to use by people with disabilities, especially wheelchair users or people with hand or back impairments. Today's population requires a less restrictive type of bear-proof food locker for outdoor recreation facilities.



Figure 1—Bear-Proof food locker at a Sequoia NP campground.

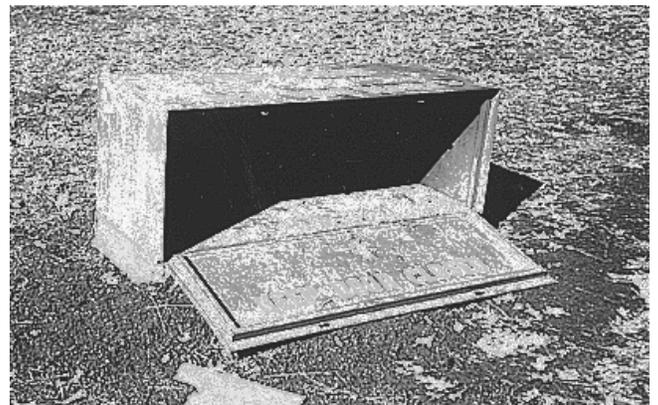


Figure 2—Typical bear-proof food locker—
Kings Canyon NP.

Bear-Proof Food Locker Improvements

Data collected by the NPS at Sequoia's Cedar Grove campgrounds suggest that the food storage capacity required by 2-5 campers is approximately 27 cf (0.8m³) of space, or about three times the size of the original NPS food locker. This new amount of space, 48-in x 42-in x 24-in (1.2m x 1.1m x 0.6m), satisfies 95 to 99 percent of the camping public's requirement for stowage of an ice chest and food.

It is because of the necessity to stow an ice chest that the food locker must be redesigned. The ice chest of today has become an indispensable tool for storing foods that must be kept cold to prevent spoilage. Consequently, today's ice chests are almost as large as the old NPS food lockers.

Ice chests are a favorite target of bears. Car damage is a frequent occurrence when there is not enough storage space provided for visitors and supplies are stored in cars. Chests, kept in the seating areas of cars, can quickly become a statistic because many bears have figured out how to bend down the top of doors on cars. Bear-proof storage lockers must accommodate the largest of ice chests and still allow room for additional food and cooking supplies, health care products (tooth-paste), and other scented toiletries.

The following bear-proof food lockers are currently available and address the problem of bears raiding food supplies in camping areas. The San Dimas Technology and Development Center (SDTDC) has been working with the NPS and industry to develop and improve several bear-proof food lockers.

Hyd-A-Meal Bear-Proof Food Storage Locker

McClintock Fabricators has been working with several bear management groups including the Forest Service and NPS to solve the problem of bear-proofing food storage lockers.

The current Hyd-A-Meal Bear-Proof Food Locker (figure 3) is McClintock's answer to a growing problem. The locker is manufactured with 12 gauge galvanealed steel; painted in a standard Asparagus Green color; and coated with a

tough high gloss polyurethane that resists humidity, fog, UV light, abrasion and chemicals. The food lockers are available in one door or two door models (doors both in the front and back of the unit) for accessibility. This allows persons with disabilities to have a shorter reach from either the front or back of the locker. The locker is fabricated with stainless steel hinges and latches. Special hasps can be added for locks as needed.

The locker uses the same Haul-All patented bear-proof latch that has been used successfully on their garbage containers. The locker has two latches for each door. There is an upper and a lower latch which are both disengaged simultaneously as the bottom latch is pushed open. The latch mechanism (figure 4) works by gravity and engages automatically when the door is closed. The latch mechanism is operated by using one hand and inserting the fingers into a latch cover open palm towards the user and pushing the fingers up into the latch. The latch mechanism does not require grasping or twisting of the hand which facilitates accessibility by the public. Child safety has also been incorporated into the overall design of the locker; each door can be opened from inside by young children.

The locker is welded on four 14-inch (356 mm) hot rolled steel legs that bolt to a concrete base. The overall storage capacity of the food locker is 23 cf (0.7m³) with dimensions of 24-in x 35-in x 48-in (0.6m x 0.9m x 1.2m) and weighs approximately 290 lbs (132 kg). The current cost of the unit is \$765.00 plus shipping from Woodland, CA. The containers are assembled with rivets and welds.



Figure 3— McClintock's Hyd-A- Meal bear-proof food storage locker.

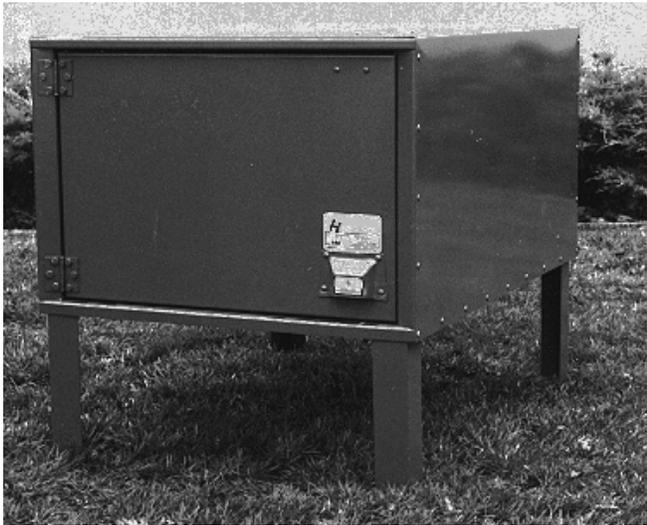


Figure 4—Hyd-A-Meal food locker door closed with bear-proof latch.

The SecureStore Locker

The Sequoia-Kings Canyon National Park is currently using a locker (figure 5) with a capacity of 23 cf (0.7m³) manufactured by the California Prison Industry Authority (CPIA) in Folsom, CA. The double spring-loaded latch mechanism currently being used has not been effective against bears. The first trial lockers were broken into by bears with the use of their prehensile



Figure 5—SecureStore Locker at Sequoia NP Campground.

lips and claws. SDTDC is currently working with the NPS to develop a bear-proof mechanism that can be retrofitted on the existing locker (figure 6).



Figure 6—Secure Store Locker at SDTDC

The locker, manufactured with 10 gauge steel, has two doors; stainless steel hinges; and is finished in a dark NPS brown color painted with a polyurethane coating over gray primer. The exterior size dimensions are 52-in x 36-in x 24-in (1.3m x 0.9m x 0.6m). The locker stands on two six-inch (152 mm) legs and can be bolted to a concrete foundation or other hard surface materials. The current latching mechanism (figures 7 and 8) can also be opened from the inside to prevent injury. The cost of the unit is \$425.00 plus shipping from Folsom, CA. The CPIA has a \$10,000 per order sale restriction which must be taken into consideration prior to

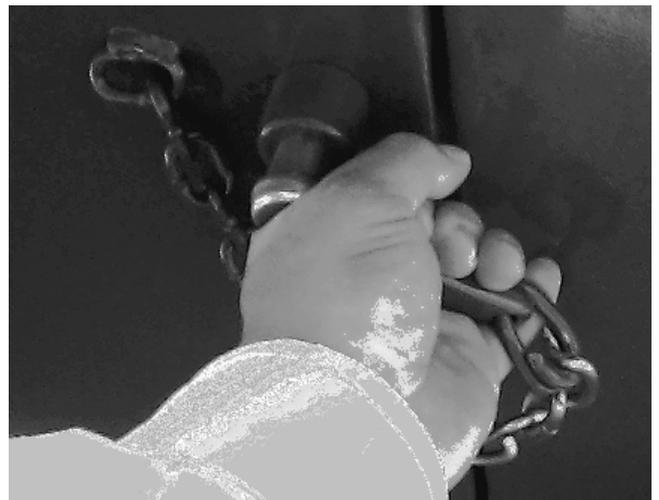
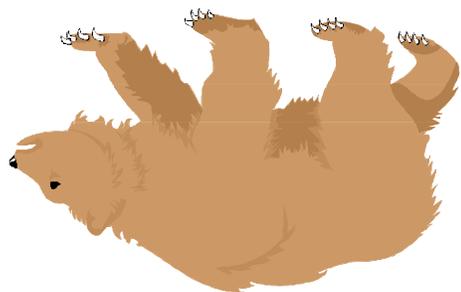


Figure 7—Secure Store Locker latch.



San Dimas Technology & Development Center
444 East Bonita Avenue
San Dimas, California 91773

purchase. For questions regarding the SecureStore Locker, the stock number is 7125-000-7500-9.



Figure 8—Secure Store Locker latch mechanism, inside view.

Manufacturers

McClintock Metal Fabricators, Inc.
455 Harter Avenue
Woodland, CA 95776-6105
Phone (916) 666-6007 or
(800) 350-3588
Fax: (916) 666-7071

California Prison Industry Authority
560 East Natoma Street
Folsom, CA 95630-2200
(916) 355-0213