

Why CopterBox?

Current Methods of Re-supply vs. CopterBox

The following real world story and pictures are from a helicopter pilot operating in the Global War on Terror:

Attached is a picture of a CH-47 doing a pinnacle two-wheeled re-supply to a high altitude ANA OP/security position. The maneuver took about 20 minutes from the time the helicopter identified the position, landed, unloaded water and MREs, and departed. It created an unnecessary risk with the CH-47's fuel management, as there were no refuel assets available at the nearest FOB. Everyone got back just fine but they were close on their fuel (well below standard VFR reserve minimums). I took the picture from the Apache.



Analysis:

Using several CopterBoxes, the Chinook could have accurately dropped the necessary supplies using one or two passes, burning minimum fuel and putting minimal time on the aircraft. The additional expense of the Apache cover aircraft would also have been minimized. The Chinook never would have had to hover or land. In a sandier environment, this scenario would have caused a dangerous brown-out condition. The Chinook would have returned to base with more than enough fuel to satisfy Army safety requirements. Time on the aircraft is precious and incredibly expensive, as these air assets are limited and maintenance costs are high. Twenty minutes in the Chinook and the Apache easily cost thousands of dollars and exposed both aircraft to unnecessary operational risk.

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CopterBox Operational Impact

- CopterBox is potentially 25% the cost of current airdrop options for small payloads.
- The low cost of CopterBox makes it an attractive, disposable option for the delivery of critical supplies or humanitarian aid to sparsely populated or remote areas.
- CopterBox is suitable for air delivering of small payloads in a variety of situations not appropriate for parachute airdrop such as small or uncleared drop zones, urban areas, areas in which parachute recovery is difficult, and for missions in which parachute delivery signature is tactically dangerous.
- CopterBox has demonstrated that it will easily cut through and penetrate tree covered drop areas.
- CopterBox does not require any extensive training, recovery logistics or take current parachute systems capabilities away from any other force requirements. It is envisioned that Load Masters and Jump Masters rig this device as a common door bundle.
- CopterBox has an indefinite shelf life, prepares for delivery in minutes and is useable in all environments.
- CopterBox is small enough to be dropped from most general aviation aircraft but can be scaled up for larger payloads.
- CopterBox in its stowed configuration allows for the efficient use of storage space.
- CopterBox automatic deployment system **does not require a static line system or Parachute Riggers**. The drogue system automatically accommodates variances in cargo loading and has been demonstrated to be very reliable. **A static line system may be used in the current configuration.**
- After landing, a single person can carry CopterBox off the drop zone and remove the payload from the box. Once the payload is removed, all of the parts can be placed inside the box for hiding by burial or camouflage. If necessary, all materials except the cages and clips can be burned and these items will rust away over time.
- CopterBox can be modified to be used as a psychological warfare leaflet dispenser.

CopterBox as a Low-Cost Logistical Alternative

Since CopterBox does not require Parachute Riggers to prepare the loads for airdrop and it is a disposable vehicle, the logistical costs involved in fielding this product are automatically reduced. CopterBox does not require specially outfitted aircraft for transportation to the release point. It does not require military static lines for deployment. These factors allow non-standard aircraft to be used, thus freeing military airlift assets for their heavy airdrop and transportation roles.

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The following cost comparison is presented to demonstrate the order of magnitude of cost difference between current airdrop delivery systems and CopterBox.

Current airdrop delivery systems have several associated costs. These costs include:

1. High initial purchase cost (designed to be reused)
2. High storage cost (temperature controlled)
3. High rigging cost due to labor-intensive set-up operations (1-2 man-hours)
4. High deployment cost from expensive-to-operate aircraft (\$1000s per hour)
5. Maintenance cost
6. Packing waste material disposal cost
7. Recovery cost

CopterBox is limited to the following costs:

1. Low initial purchase cost (designed to be disposable)
2. Low storage cost (only dry, covered shelter is needed)
3. Low rigging cost due to quick setup for each unit (10-15 man-minutes)
4. Low deployment cost from much less expensive-to-operate aircraft (\$100s per hour)

To compare and contrast the above associated costs, it is apparent that there are four common cost areas between current airdrop delivery systems and CopterBox. CopterBox costs less in all four of these areas for reasons shown in parentheses above. The savings realized by the four common cost areas plus the cost areas not associated with CopterBox are great, thereby significantly lowering the cost of supplying military operations, as well as future humanitarian, rescue and firefighting operations.

Parachute delivery systems require regular maintenance including repairs due to damage incurred from operational use, regular interval inspections and repacking to ensure reliability. CopterBox does not require such maintenance and has a long shelf-life.

Current airdrop delivery systems produce a large quantity of waste material due to excess paper honeycomb packaging material, wood waste for pallet and crate construction, and other excess waste materials. This material not only could be put to better use, but also has an associated handling and disposal cost.

The CopterBox kit comes in a pallet of ten units, each with the required packing tools. Plastic wrapping material over the pallet of kits will prevent water damage during transit and storage.

Current fabric systems are designed to be reused and therefore must be recovered after deployment in order to capitalize on their design. This recovery process is not only expensive but is also a distraction to the warfighter. If the system is not to be reused, then an expensive asset must be replaced. Since CopterBox is disposable from the outset, it requires no recovery expense and can be disposed of by the re-supplied warfighter. It can be easily burned, buried or camouflaged and forgotten. CopterBox will biodegrade over time.