



Boeing Material Recommendations For Airports – Planning for an Aircraft Recovery -

Fortunately, most airports never have to participate in the recovery of a large commercial airplane, one in which the airplane may be off the runway, buried in mud with broken landing gear or worse. For most airports around the world, it is typically the responsibility of the airplane operator to conduct the recovery. However, since the airport is typically involved in supporting the recovery operation and given that most airports have only a single runway to support flight operations, it is in the airport's best interest to expedite the recovery and return the airport to normal flight operations.

The operators of Boeing aircraft (including Douglas and McDonnell-Douglas models) are provided an Airplane Recovery Document (ARD) for each model type of Boeing airplane they operate. The ARD provides methods for recovering an airplane in a safe and efficient manner and other critical information, such as maximum allowable loads for lifting, tethering, and transporting the airplane. The airplane operator will often work with special teams from Boeing Commercial Aviation Services (CAS) and Boeing Airplane on Ground (AOG) to plan and execute the recovery operation. It should be noted that the Airplane Recovery Documents contains proprietary data, and are available only to operators of Boeing airplanes.

Boeing, however, realizes that airports may desire as part of their normal emergency planning efforts to prepare for supporting a potential recovery operation. Attached is a list of general purpose equipment and materials (consumables), that have been extracted from the Boeing ARD, which airports may wish to have available to support an airplane recovery. Some of the equipment/ materials may already be in inventory. Other equipment is typically available from local sources on an "as-needed" basis. It is possible that an airport could use less items or items with smaller capacities. Airports can also use different equipment or substitute equipment if it is necessary.

Additional questions concerning this issue can be directed to any of the following Boeing groups:

Boeing Airport Technology
P.O. Box 3707, MC 20-93
Seattle, WA 98124-2207
Phone: 425-237-1004
Fax: 425-237-2665
AirportTechnology@boeing.com

Or
Boeing Commercial Aviation Services
P.O. Box 3707, MC 27-57
Seattle, WA 98124-2207
Phone: 206-766-3904
AirplaneRecovery@boeing.com

Or

AOG Operations
P.O. Box 3707, MC: OP-30
Seattle, WA 98124-2207
Phone: (425) 342-2612
Fax: (206) 342-4543
AirplaneRecovery@boeing.com

NO.	ITEM	QUANTITY
1	Fencing, with protective signage	As Necessary
2	Steel Plate, 1 in. (25 mm) thick, 4 ft x 6 ft (122 x 183cm)	12
3	Steel Plate, 1 in. (25 mm) thick, 3 ft x 3 ft (91 x 91cm)	12
4	Manila Rope, 3/4 in. (19 mm) diameter	500 ft (152 m)
5	Pulley Block, Double sheaves for 3/4 in. (19 mm) diameter rope	4
6	Hardwood Beam, 6 in. x 6 in. x 4 ft (15 x 15 x 122 cm)	2
7	Felt Padding, or equivalent material	200 sq ft (20 sq m)
8	Mattress, Household type	8
9	Plywood Sheet, 3/4 in. (19 mm) thick, 4 ft x 8 ft (122 x 244 cm)	50
10	Plywood Sheet, 1 in. (25 mm) thick, 4 ft x 8 ft (122 x 244 cm)	125
11	Shoring Timber, Hardwood, 6 in. x 3 in. x 8 ft (15 x 8 x 244 cm) and, 12 in. x 12 in. x 10 ft (30 x 30 x 305 cm)	500
12	Mobile Electrical Power Unit, 5 Kw or larger	1
13	Floodlights with Stands, Use with the above Power Unit, which includes leads, junction box and 50 ft (15 m) extension cords	4
14	Flashlights, standard, 1 per person	As Necessary
15	Work Lights, Engine Driven	4
16	Low-Height Flat Bed Trailer, 150 ton (136 metric ton) capacity 4 ft (1.2 m) maximum height	2
17	Tow Cable, 20 ton (18 metric ton) capacity wire rope 100 ft (30 m) length, splice ends at each end	4
18	Lifting Cable, Landing Gear Structure Assembly, 50 ton (45 metric ton) capacity 20 ft (6 m) length, with splice eyes and thimbles	3

NO.	ITEM	QUANTITY
19	Tethering Cable, or 3 in. (7.6 cm) diameter rope, 20 ton (18 metric ton) capacity 80 ft (24 m) length, with splice eyes and thimbles	8
20	Ratchet Chain Hoist, 3 ton (2.7 metric ton) capacity	8
21	Ground Anchor, 10 ton (9 metric ton) capacity	8
22	On-Site Communication Equipment, Portable radios, interphone headsets, or mobile phones	5
23	Railroad Ties	Up to 1500
24	Crushed Rock, 1.5 in. (3.8 cm)	30 cubic yards (23 cubic meters)
25	Pit Run Gravel	50 cubic yards (38 cubic meters)
26	Planking, Steel or Aluminum, 2 in. x 8 in. x 8 ft (5 x 20 x 244 cm) OR Equivalent Epoxy Filament Cloth Ground Cover	500
27	Mobile Crane, 12 ton (10.8 metric ton) capacity. Height 28 ft (8.53 m) Reach 10 ft (3 m) for airplane component lifting, including engines	1
28	Bulldozers, Bucket Loaders, etc., For Excavation	As Necessary
29	Winching Vehicles, Forklifts, Flat-bed Trucks, etc., For Tethering, Moving, Loading, Unloading	As Necessary
30	Ladders, At least 24ft (7.3m) extension	2
31	Miscellaneous Tools: Shovels, picks, crowbars, sledge-hammers, hoes, chainsaws, hammers, nails, handsaws, small hydraulic jacks, shackles, etc.,	As Necessary
32	Ballast, Sand bags, cement blocks, scrap iron, drums filled with water, etc.	3000 LB (1360 Kg)
33	Trailers or Workshop Tent	As Necessary
34	Quick-Set Concrete	As Necessary
35	Large Mobile Cranes, For airplane wing and body lifting	As Necessary
36	Used Rubber Tires	30
37	Grounding Rod, Coppertone-coated steel with 60 ft (18 m) cables and clips	10 ft (3 m)

NO.	ITEM	QUANTITY
38	Fuel Off-Load Capacity of 20,000 gallons (75,710 liters), Fixed mobile or bladder fuel tanks	As Necessary
39	Water Pump for Draining Ditches, 2 in. (5 cm) diameter pump with a 50 to 100 gpm (189 to 379 liter/min) capability. Pump power supply with 3 in. (7.6 cm) diameter, 100 ft (30 m) suction hose so the pump may clear the fuel vapor area.	2
40	Soil Penetrometer	1