SPECIAL APPARATUS

The Foam Apparatus

by Battalion Chief John A. Calderone

To meet the requirements of delivering large quantities of foam rapidly to the scene of a fire or hazardous material spills, the FDNY maintains several types of apparatus. These units have varying capacities and capabilities, as well as methods of operation and response.

The Foam Tender Unit is a custom-built tanker, constructed by Saulsbury on a Mack chasis. It is equipped with a 200 gpm pump and carries 2,000 gallons of fluoroprotein foam concentrate and 1,000 gallons of alcohol-resistant foam concentrate. - *photo by John A. Calderone*

FOAM CARRIERS

Foam Carriers, more commonly called Foam Units, are converted 1,000 gallon per minute (gpm) pumpers. These apparatus carry 500 gallons of fluoroprotein foam concentrate in their booster tanks. In addition, another 120 gallons of fluoroprotein foam concentrate, 120-gallons of high-expansion foam concentrate, and 100-gallons of alcohol resistant foam concentrate in 5-gallon containers are carried in the hose bed and above the side compartments on these apparatus.

The foam carriers are staffed by the engine they are quartered with. A backup engine company is designated and trained to operate the foam carrier if the primary engine is unavailable, but any engine company can be special-called to deliver a foam carrier to the scene. There are eight such units in service, designated Foam Apparatus 81 through 88. Foam deck guns have been fitted to all foam carriers while portable foam cannons are carried by Foam Units 81, 82, 85, and 86. All foam carriers, except 83 and 88 are equipped also with portable high-expansion foam generators.

Two foam carriers are assigned to respond on receipt of radio signals 10-86 (no code) and 10-86 Code 3. All eight foam carriers respond on 10-86 Codes 1 and 2. Foam carriers are assigned also to respond on initial alarms for specific target hazards such as the Long Island Pipe Line. An incident commander may special-call a foam carrier to any incident where its equipment and capabilities would be effective.

FOAM TENDER UNIT

The Foam Tender Unit is a custom-built 3,000-gallon tanker that has three 1,000-gallon compartments. It carries 2,000 gallons of fluoroprotein foam concentrate and 1,000 gallons of alcohol resistant foam concentrate. The unit is equipped with a 200 gpm pump that can supply foam solution to deck pipes, hand lines, tower-ladders, ground-mounted foam cannons, or portable foam tanks. A pumper or fireboat must supply water to the Foam Tender to accomplish foam solution delivery. The Foam Tender can also transfer foam concentrate at a rate of 200 gpm at 250 pounds per square inch to foam injection metering modules, fireboats, foam carrier booster tanks, or to bulk storage plant foam systems.

The Foam Tender Unit is quartered with and staffed by Engine 238. It responds on radio signal 10-86 (no code), 10-86 Codes 1 and 2. Engines 218, 237, and 325 are trained as backup units to operate the Foam Tender. An incident commander can special-call the Foam Tender Unit whenever its services would be of assistance.

HIGH-EXPANSION FOAM UNIT

The High-Expansion Foam Unit is a converted 1,000 gpm pumper that is equipped with an apparatus-mounted large capacity high expansion foam generator. This generator can supply high expansion foam at the rate of 15,000 cubic feet per minute (cfm). High expansion foam concentrate carried includes 500 gallons in the booster tank, and another 100 gallons in 5-gallon containers. This unit also carries an application chute and a smaller, 7500 cfm portable high expansion foam generator.

The High Expansion Foam Unit is quartered with and staffed by Engine 212. Engines 209 and 237 are its trained backup units. The unit responds on receipt of radio signal 10-86 Code 3 and whenever an incident commander special-calls it.

The High Expansion Foam Unit is a converted pumper that has an apparatus-mounted, large-capacity high expansion foam generator capable of supplying high expansion foam at the rate of 15,000 cfm. Foam is delivered through the large fah at the rear step. - *photo by Joseph Pinto*

BULK FOAM UNITS

Twelve engine companies with standard pumpers have been designated as Bulk Foam Units. These units have storage tanks in their quarters that contain 500 gallons of fluoroprotein foam concentrate along with a pneumatic transfer system to allow the concentrate to be transferred from the storage tank to the booster tank of their standard pumpers.

Prior to responding, the bulk foam engine company must first dump its booster tank water and then transfer the foam concentrate into its booster tank.

Engines 4, 37, 66, 83, 153, 154, 167, 238, 259, 288, 323 and 331 are designated bulk foam units. Any engine company, however, can be assigned to respond to one of these quarters and transfer foam concentrate into its booster tank for delivery to a scene.

FOAM STORAGE DEPOTS

Designated engine companies maintain a large supply of 5-gallon containers of fluoroprotein and high expansion foam concentrate in their quarters. These units are Engines 1, 72, 154, 158, 167, 207, 212, 260, and 288. In addition, there is a supply of alcohol resistant foam concentrate located at Engine 158.

FOAM EQUIPMENT

In addition to the equipment mentioned above, various line units are assigned foam equipment. All satellite hose wagons and the Maxi-Water Unit carry portable high expansion foam generators and foam cannons that can be used either on the satellite deck pipe or from a tower-ladder bucket. Additional portable high expansion foam generators are assigned to Engines 1, 5, 7, 8, 18, 22, 35, 40, 47, 84, 92, 227, 228, 304, 305 and Squad 1.

Finally, Engines 9, 18, 95, 64, 72, 96, 152, 154, 159, 167, 206, 207, 210, 212, 238, 260, 284, 291, 321, 324 and 330 are equipped with foam injection modules.

UNIT	ASSIGNED ENGINE	BACKUP ENGINE
Foam 81	Engine 260	Engine 299
Foam 82	Engine 96	Engine 64
Foam 83	Engine 152	Engine 163
Foam 84	Engine 154	Engine 163
Foam 85	Engine 167	Engine 163
Foam 86	Engine 206	Engine 226
Foam 87	Engine 321	Engine 247
Foam 88	Engine 95	Engine 74