



Interagency Aviation TECH BULLETIN



No. IATB 2015-03

Date: May 4, 2015

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SUBJECT: Plastic Aerial Ignition Spheres Passing Through Closed Chutes

DISTRIBUTION: Plastic Sphere Dispenser Operations

ISSUE: A few occurrences of plastic aerial ignition spheres falling through the chutes while the feed control handles are closed have raised concerns for plastic sphere dispenser (PSD) operators. This issue has only been found to occur when using Aerostat, Inc. (PSDS, Inc.) plastic spheres and a small number of Premo MK III PSD machines.

DISCUSSION: A small number of Premo MK III PSD machines were either retrofitted or manufactured with a larger interior dimension of the chutes, in or near the year 2011. These chutes were made larger to accommodate plastic spheres that had external ridges around the weld seam.

The standard dimension for Premo and Aerostat plastic spheres is 1.25 inches in diameter. However, Aerostat plastic spheres are slightly smaller in one direction across the sphere halves (figure 1). This smaller size normally will not affect PSD operations, but the size difference of slightly smaller Aerostat plastic spheres combined with slightly larger chute dimensions can lead to plastic spheres falling past the shutoff fingers of the feed control handles (figure 2). This could cause inadvertent ignition if the PSD machine is powered on but the feed control handles are closed.

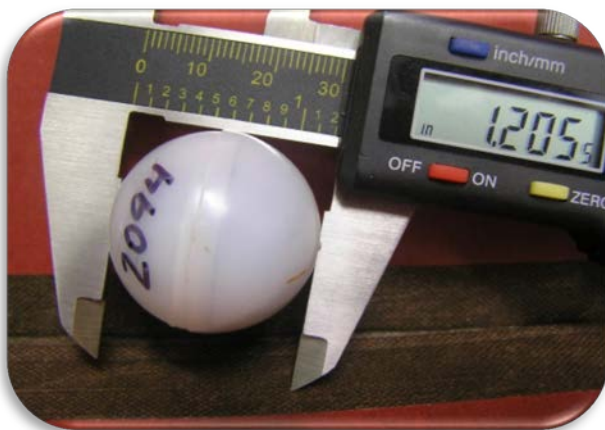


Figure 1. The dimension across the halves of this Aerostat plastic sphere is smaller than 1.25 inches.



Figure 2. The shutoff finger in this chute does not make adequate contact with the Aerostat plastic sphere.

No record of the exact number of Premo machines with larger chutes exists. Some were retrofitted by the Premo PSD Service Center, Fire and Aviation Resource Services. Those specific machines have also been retrofitted with longer shutoff fingers that will block the smaller spheres. Other machines were retrofitted or manufactured by Vanguard Plastics Ltd (in or near 2011), and no records of those that may have larger chutes were kept. These machines are very likely to allow Aerostat plastic spheres to pass by the closed feed control handles.

RECOMMENDATION: Any unit that receives plastic spheres from Aerostat should attempt to slip several different spheres by each of the shutoff fingers with the feed control handles closed. If any of the plastic spheres pass through, do not use the spheres, and contact Fire and Aviation Resource Services (1-828-775-1871), to obtain a shutoff finger modification kit (at no cost) that will lengthen the shutoff fingers. After installation, retest each chute to ensure the shutoff fingers prevent spheres from passing through.

Remember that feed chutes are interchangeable between PSD machines, so be aware of any swapping that could happen in the field. It is a good idea to mark the assembly to track if your machine has been retrofitted.

SEI Industries LTD (current manufacturer of the Premo MK III) does not recommend using any plastic spheres that are made by another company in the Premo MK III. There is no interagency policy requiring the use of any specific manufacturer's plastic spheres, however it is important to be aware of small product differences that may cause issues in use.

Any questions about this bulletin may be directed to Shawn Steber (smsteber@fs.fed.us or 406-829-6785) at the Missoula Technology and Development Center.

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