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# THE GAMGRAM

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No. 46

RECEIVING FUEL

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It is often said that the refueling operation is the “last line of defense”, insuring that the fuel going to aircraft is the correct fuel, contaminant free. If this is true, and surely it is, then receiving fuel is a very critical element in the supply system. Unfortunately, it is not always treated that way.

In one recent case, the driver of a delivery transport truck (Bridger) arrived at an airport saying he had a load of Avgas. The man on duty thought it was odd because he had not been told of a fuel delivery. He shrugged his shoulders and told the truck driver to pull into the fuel farm (**Mistake #1**). He then connected up the delivery hose without a white bucket test; a bucket was less than 10 feet away (**Mistake #2**). He then finally looked at the driver’s paperwork. He did notice that his company’s name was not on the papers, the delivery was meant for another FBO at the same airport. He did not notice the term “Jet Fuel” on the ticket (**Mistake #3**). He called his boss on the radio, who specifically asked if he had done a white bucket test. Feeling it was a small lie, he said “yes” (**Mistake #4**). His boss told him to continue unloading the rest of the truck’s compartment (the truck had several compartments) and then send the truck to the competitor’s fuel farm to unload the rest of the fuel. This was done.

Fortunately, his boss had pride and professionalism, traits in all too short supply these days. He got up from his desk and drove over to his competitor’s facility to double-check. After checking the paperwork and smelling the empty truck tank at the hatch (cover), he shut down the airport to Avgas aircraft and ordered one aircraft that was already in the air to make an emergency landing. It was found that the aircraft’s auxiliary tanks were half Avgas and half Jet Fuel.

We have heard of many, many stories like this one, with contaminants from diesel to deicing fluid to liquid fertilizer to milk (yes milk!). The lesson here is obvious, but we hear similar examples like this every year. This is why we have written this GamGram.

## RECOMMENDED MINIMUM FUEL RECEIPT PROCEDURE

Make sure your oil company and/or airline customer approves of every procedure before you adopt it! An excellent guide line is ATA - 103, the airline standard. This can be obtained by calling 202-626-400.

1. Inspect the paperwork. Make sure all data are correct, especially the fuel type and trailer/bridger number.
2. Inspect the unloading connection and clean off any debris/contamination. Connect the ground wire.



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3. If you are going to use the truck's hose, make sure it is clean and that the gaskets are in place and in good condition.
4. If you are going to use the truck's own pump to transfer the fuel, make sure it is properly drained of any previous product.

**NOTE:** Although truckers often will tell you that you don't have to check the fuel, do it anyhow! Errors occur and you cannot rely on someone else's quality control.

5. It is best to wait 10 minutes for the tank to settle. Make sure to do a white bucket test. Do Not flush before a test. The fuel should appear "Clear and Bright". A mayonnaise jar can also be used for inspection of the fuel in the bucket. If the first sample is no good, do another and perhaps even another. See ASTM publication number MNL-5 for the procedure, or the ATA-103.
6. If the fuel passes the white bucket test, proceed to a hydrometer test, if possible. (See ASTM MNL-5 for a procedure, or our GamGram 19). Unfortunately, many airports do not perform this test.
7. If the fuel passes the hydrometer test, proceed to the water test. The Shell or Exxon/Velcon Hydrokit tests are both good, and the Metrocator is also used, but is somewhat less common. (Of course our Aqua-Glo is a more precise lab quality test for water content).
8. Only after all of the tests are completed should you connect and prepare to unload.

**NOTE:** A closed circuit sampler can be used to more conveniently perform tests 5-9. See our Bulletin 138.

9. You are not done yet! Make sure your tank has enough capacity for the new delivery and then perform a pre-check of your over-fill protection system, if so equipped.
10. Unload.

Before you use the fuel we recommend you set up to recirculate and run a filter membrane test to insure that you have no excessive particulate (see ASTM MNL-5, D-2276/IP-216). If you have had problems, you may wish to perform this test during unloading. To speed up the test, partially close a downstream valve to build up 20-30 psi so as to speed up the flow through the filter membrane.

**Remember** – If you or your people ever say, "It can't happen here", it will! Training, equipment and checklists are useless without pride and professionalism. Double-check everything, assume nothing and trust no one, but when you find the job well done, say so.

If you never receive a bad or incorrect load of fuel, and never receive credit for saving lives, at least you can hold your head high and have pride because you know you **would** have caught a problem, had it come your way.

Most of the time pride is the only reward for professionalism, but it is enough, don't you agree?