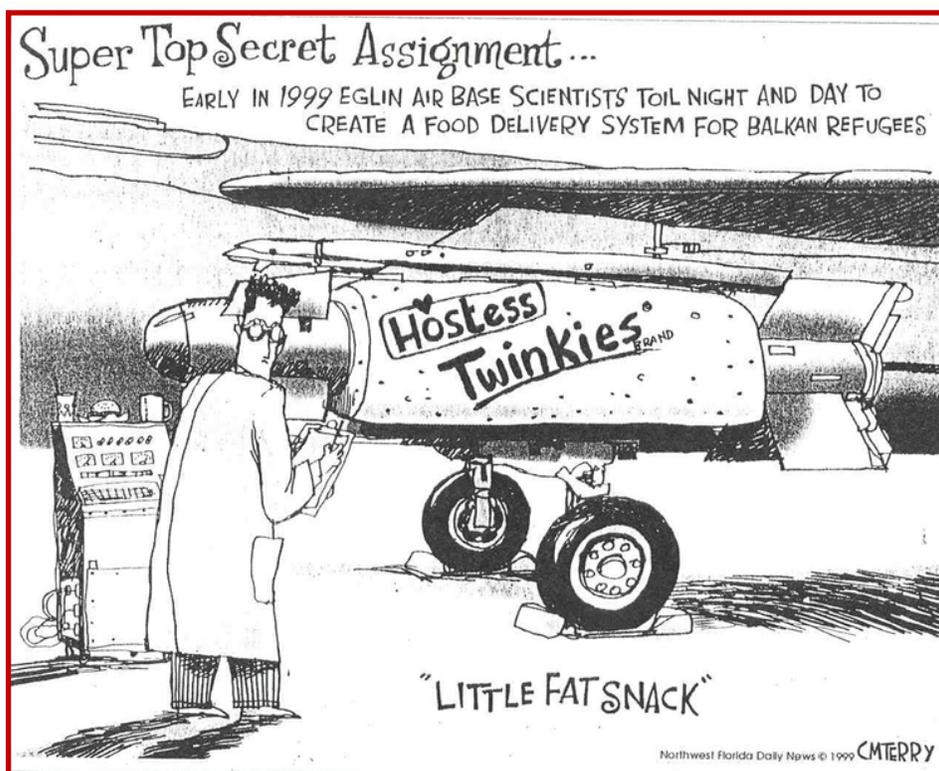


The Cookie Bomb

By: Yancy D. Mailes



Paths to the Present
FLASHBACK



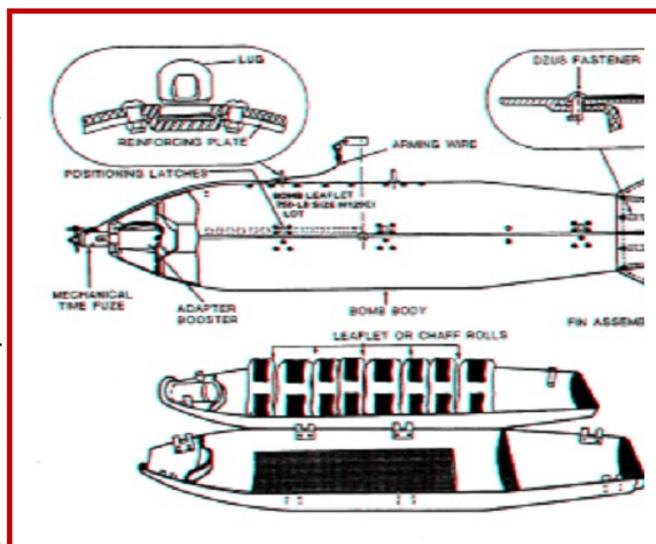
M129E3 Parody. (Northwest Florida Daily News)

As Eglin personnel supported Operation Allied Force, they modified the Enhanced GBU-15, tested the ALE-50 Towed Decoy, and developed what the local press jokingly called the "Cookie Bomb." In all cases the work proved vital to the war effort, but the Cookie Bomb not only demonstrated the agility of AFMC's Plan 70 (surge operations for AFMC depots), but more importantly, the innovation of Airmen.

During the first week of the Kosovo conflict, the systematic bombings conducted by NATO warfighters did little to bring Yugoslavia to the negotiating tables. Compounding the frustration, low cloud cover kept laser-guided weapons from hitting their intended targets and worst of all, the enemy downed one of the Air Force's elite F-117s. The situation seemed bleak, but it would get worse.

Trying to escape the atrocities committed against them, Kosovar refugees sought aid in neighboring countries. As they fled, many became trapped, unable to return to their homes and unable to move to safety. Coalition leadership realized they needed to protect and feed the refugees, but with the surface-to-air missile threat remaining, NATO did not have an option to conduct dangerous humanitarian missions using low and slow cargo aircraft. As with the Berlin Airlift, an innovative solution was needed.

On the morning of 14 April 1999, 46TW/Seek Eagle received a requirement from Air Combat Command (ACC) requesting that they assemble a quick reaction test team to certify a modified M129 E2 leaflet bomb for delivery from an A-10, F-15E, B-52H, and the F-16A-D. As requested, Eglin testers would stuff the M129 E2 with Humanitarian Daily Rations (HDR) instead of leaflets and test whether or not the Air Force could deliver food from high flying jets. The Air Force would designate the modified munition as the M129 E3. As expected, Seek Eagle assembled its staff and began developing the recommended flight clearance for testing the M129 E3.



M129 Packing with leaflets. (USAF)

The M129 Series Leaflet bomb was made of fiberglass reinforced plastic, split longitudinally into two sections, and held together by four latch assemblies on each side. When joined, the halves formed a cylindrical body with an ogival shaped nose. The M129 bombs were identical except the M129 E2 had a larger reinforcing plate mounted inside the top half of the body to provide greater strength against ejection forces and to withstand pylon sway brace pressures.

When released from the aircraft, an arming wire withdrew from a mechanically timed fuze, arming the weapon and starting a timer. The armed fuze would function at a preset time initiating the detonating cord. The canister halves separated dispensing the contents of the weapon.

Flt. Lt. Dominick Simms became the focal point for the Seek Eagle Quick Reaction Test, and along with his staff, decided they first needed to determine the mass properties of the new weapon before moving to flight testing. To do this they needed to locate 12 empty E2 canisters, 12 fins, and 300lbs of HDR's. He immediately sent two individuals to Anniston, Alabama to retrieve 12 sets of fins while the bomb dump on Eglin supplied the 12 canisters, and the HDR's were enroute with an ETA of 1200 Friday 16 April. To pack the M129s, Simms called upon SMSgt Mike Luther from Hill AFB, Utah. Knowing ACC needed an answer immediately, Simms planned to determine the M129's mass properties by Friday evening or early Saturday morning.

While waiting for items to arrive, Seek Eagle personnel used Stores Technical and Mass Properties Data from earlier M129 E2 tests and identified two possible outcomes for the modified weapon. If the mass properties of the new weapon matched those of the existing M129 E2, they would not need additional flight tests to determine safety parameters. However, if the mass properties fell outside tolerances, with a lighter store and a center of gravity further aft, they would need additional separation testing.

At 0900 on 15 April 1999, the M129 E3, Plan 70 team assembled in the 46th Operations Group conference room and began to hammer out the initial steps for flight testing the weapon. Simms began the meeting discussing the ACC request. He shifted gears quickly stating his need of enough M339 fuzes to equip five full up rounds for flight testing, 1,000 pounds of HDR's, and confirmation of which range would work best. Although they had not determined mass properties of the new weapon, he pressed forward with a flight test program.

After the formal briefing, Simms opened the floor to questions and discussion, which immediately turned to concerns of refugees being hit with debris and the HDRs. Simms stated "At this time we are in dire need to field an alternative solution to getting those people food. We are concerned about getting the store off the aircraft and down to the ground. We will approach other problems at a later date." The members agreed to test the weapon on range B-70 on Sunday the 18th. One engineer queried of how they would designate the modified weapon in the F-15E weapons computer and Ted Hartsoe (40 FTS) stated they could use the generic code, MC-1, which was identified as an unknown weapon. He reflected that during DESERT STORM and later in SOUTHERN WATCH missions when aircrews would carry stores that had not been updated on the weapons computers, aircrews had also used MC-1. Simms agreed, as did many others in the room.

Between the 0900 Plan-70 meeting and late afternoon of the 16th, *Seek Eagle* personnel determined that because the new weapon was lighter with the HDR's instead of leaflets, and because its center of gravity was further aft, they needed to flight-test the modified weapon. Moving quickly, personnel from the bomb dump packed four bundles of 12 HDRs into the bottom half of the large center compartment of an M129 canister, installed the det cord, then attached the two halves. They



Installing det cord on the canister. (USAF)



HDRs packed into an M129. (USAF)

ferried the modified weapons to the Munitions Precision Measurements Facility and measured the mass properties and checked the weapon's center of gravity. As expected, the store was lighter than the M129 E2 and the CG was further aft, but well within tolerance. With this data, *Seek Eagle* issued a flight clearance on 17 April for the carriage of three M129 E3's per conformal fuel tank (LC1, LC2, LC3, RC1, RC2, and RC3) for a total number of six M129 E3's per aircraft. This totaled 288 HDRs per F-15E.

On Saturday 17 April, 46 TW personnel conducted the first test of the M129 E3 from an F-15E. Dropped from the first station on the left conformal tank at 425 KCAS, 15,072 feet AGL, with the fuze set at 30 seconds for an estimated 3,000-foot function altitude, the bomb functioned as expected, but fell approximately 4,000 feet short of the planned target. The HDRs impacted the ground in a large 1,500-2,000 circle. Chase aircraft reported a clean separation, but post flight chase video indicated that the bomb separated with an approximate 40-45 degree of nose down pitch attitude. Ground personnel inspected the impact area and reported that 40-50% of the HDRs were intact. Several of the packages appeared ruptured due to det cord, wind blast, and ground impact. Ground personnel opened several of the HDRs and found the internal food packages smashed, but all contents edible.

Pilots dropped the second M129 E3 from the third station on the left conformal tank at 432 KCAS and 15,061 Feet AGL with the MK-339 fuze set at 32.1 seconds for an estimated 1,500 feet function altitude. However, the bomb functioned at 200 feet above the ground, and 1,000 feet left of the planned target. Although off target, the HDRs impacted the ground in a more confined (500-1,000 feet) area. As with the first drop, ground personnel inspected the impact area and reported that 70-75% of the HDRs remained intact with the same damages as the previous drop.

Instead of dropping the third weapon, test personnel decided to bring the last M129 E3 back to Eglin to inspect its contents for damage from atmospheric pressure changes. Post flight inspection revealed that a small number of packets, specifically the jelly packets, had ruptured, and engineers assumed some of the damaged occurred during the assembly process. To relieve the pressure in flight and stop the jelly packets from exploding, Eglin engineers recommended making a small slit in each HDR during the packing process.

Although the M129 E3 satisfied the general requirements of the test objective, the F-15E/M129 E3 carriage configuration limited the total number of HDRs to 288 per airplane. Because of this, the test team felt that the Air Force should use the F-15E as a secondary option to B-52. Air Force leadership agreed.

In less than four days, the Eglin test team demonstrated the agility of the AFMC's Plan 70 process and how quickly they could prove mods for the warfighter. With that said, even as the test was taking place, leadership in Europe inquired on options to better saturate the ground with HDRs. They eventually opted to use the C-17 at high altitude, dropping tri-walled boxes full of Humanitarian Daily Rations.



M129 E3 released from F-15E. (USAF)



HDRs after impact. (USAF)





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