Texas Engineering Extension Service
(TEEX)

2010 Summer Municipal Fire School

“Advanced Municipal Fire Operations”

(AMFO)

TEEX CAFS / NAFS & Class “A” Foam

- Classes & Testing conducted at Brayton Fire Field, College Station, Texas. Texas A & M University.
- AMFO Group Supervisor- Mike Montgomery Director / Fire Marshal, Harris Co. Texas.
- CAFS / NAFS & Class “A” Task Force Leader- David Abernathy Asst. Chief Fire Coordinator, Pittsburg FD, TX. / Texas Forest Service.
- Lead Instructors- Mark Tracy/Waterous and Neal Brookes/Darley

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- Testing conducted in concrete burn training room protected at ceiling level with 1800 F. fire resistive tiles.
- Burn room was open on one side to facilitate observation, instrumentation & applications.
- Fuel loading was 6 wood pallets & ½ bale of straw placed on a burn crib 18” off floor.
- Ceiling temperatures were maintained @ 600 F. for each of the test burns.
- All flow rates were at 60 GPM for test continuity.

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All tests began at 600 F. ceiling temperature. 1st test was a indirect application of each extinguishing agent to a ceiling corner. No agent impacted the seat of the fire which was located in a burn crib in the center of the floor.

Suppression Method	Ceiling Temperature at Beginning of Application (Degrees F.)	Ceiling Temperature After Interior Corner Application (Degrees F.)
Water Only	600	500
Class A Foam Only	600	500
CAFS Only	600	400

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Knockdown from 600 degrees F.				
Time to Achieve Knockdown	Ceiling Temperature After Knockdown (Degrees F)	Gallons Used to Knockdown	Class A Foam Percentage	Ounces of Concentrate
8 seconds	500	8	N/A	N/A
7 seconds	400	7	0.5	4.48
3.5 seconds	300	3.5	0.5	2.24

If 0.3 % was used = 1.33

2nd test was fire knockdown to the point of “Fire Control”.

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3rd testing application was to provide mop-up of each test burn to the point that crews felt they could safely leave the site without a rekindle. The plain water application rekindled to open flame within minutes of shut down.

Mop-up			
Time to Achieve Mop-up	**Ceiling Temperature Immediately After Mop-up (Degrees F)**	**Gallons Used to Mop-up**	**Ounces of Concentrate**
35.6 seconds (Then Rekindled)	**400**	**35 (Didn't Extinguish)**	**N/A**
16 seconds	**250**	**16**	**10.24**
8.5 seconds	**200**	**8.5**	**5.44**

If 0.3 % was used = 2.07 oz.

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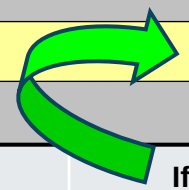
TOTALS	
Total Gallons Flowed	**Total Ounces of Concentrate**
43	**N/A**
23	**14.72**
12	**7.68**



If 0.3 % was used = 2.9 oz. TOTAL Concentrate use.

“Total” agent applications include fire knockdown / control and mop-up of the test fires.

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- Conclusion

This testing was conducted in July 2010 by a consortium of fire service and fire equipment instructors that were conducting CAFS training as part of the 81st annual Summer Municipal Fire School . This class is a portion of the Advanced Municipal Fire Operations courses presented at Texas A & M Universities "Brayton Fire Field" in College Station, Texas. The school is administered by the Texas Engineering Extension Service (TEEX) which conducts emergency services training year round and is known as one of the best fire training facilities worldwide.

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- Conclusion

The data gathered in the live fire testing bears witness to and reinforces the lessons learned over several decades of Class "A" and Compressed Air Foam System (CAFS) fire fighting. The numbers compiled in these tests once again demonstrate definitively that Class "A" foam solution performs better than plain water and CAFS performs far superior to both solution and plain water applications in fire fighting. This validates the data acquired in many previous tests including the Salem Tests and the widely acknowledged Palmdale Burns.