WHAT IS CLAIMED IS:

1. A method for scheduling a foam cleaning of a gas turbine engine, comprising:

quantifying a range of improvement to an operational parameter of a family of gas turbine engines achievable by foam cleaning of a member of the family;

operating a specific engine of the family;

measuring the performance of the specific engine during said operating;

determining that the specific engine should be foam cleaned; and

scheduling a foam cleaning of the specific engine.

2. The method of claim 1 which further comprises providing the measured performance by telemetry to a data center.

3. The method of claim 2 wherein said scheduling a foam cleaning of the engine is by the data center.

4. The method of claim 1 wherein the engine has an owner and said determining is by the owner of the engine.

5. The method of claim 1 wherein the engine has an operator and said determining is by the operator of the engine.

6. The method of claim 1 wherein said measuring includes measuring the start time of the engine and said determining is based on said measuring.

7. The method of claim 1 wherein said measuring includes measuring the fuel consumption of the engine and said determining is based on said measuring.

8. The method of claim 1 wherein said measuring includes measuring the rotor speed of the engine and said determining is based on said measuring.

9. The method of claim 1 wherein said measuring includes measuring the exhaust pressure of the engine and said determining is based on said measuring.

10. The method of claim 1 wherein said measuring includes measuring the turbine temperature of the engine required to achieve a particular power output and said determining is based on said measuring.

11. The method of claim 1 wherein said measuring includes measuring the operating speed of the engine at cruise and said determining is based on said measuring.

12. The method of claim 1 wherein said measuring includes measuring the time on wing of the engine and said determining is based on said measuring.

13. The method of claim 1 wherein the measured performance is provided by telemetry, and which further comprises scheduling a foam cleaning of the engine.

14. The method of claim 1 wherein the measured performance is provided by telemetry, and said scheduling is based on said determining.

15. The method of claim 1 which further comprises providing the measured performance by telemetry, wherein said determining includes using the measured performance provided by telemetry.

16. The method of claim 1 wherein said determining includes comparing the measure performance to the quantified range of improvement.

17. The method of claim 1 wherein said determining is at least partly based on carbon emissions of the engine.

18. The method of claim 1 wherein said determining is at least partly based on oxides of nitrogen emissions of the engine.

19. The method of claim 1 which further comprises streaming foam into the engine after said scheduling.

20. The method of claim 19 wherein said streaming the supply of foam is to a bleed air duct of the gas turbine engine.

21. The method of claim 19 wherein said streaming the supply of foam is to a manifold of tubing mounted to the gas turbine engine.

22. The method of claim 19 wherein the gas turbine engine has an air inlet and said streaming foam is into the air inlet.

23. The method of claim 22 wherein the gas turbine engine has a hot section and which further comprises cleaning the hot section by said streaming foam into the air inlet.

24. The method of claim 19 wherein the gas turbine engine has a compressor and said streaming foam is into the compressor.

25. The method of claim 24 wherein the gas turbine engine has a hot section and which further comprises cleaning the hot section by said streaming foam into the compressor.

26. The method of claim 19 wherein said streaming is through a non-atomizing nozzle.

27. The method of claim 19 which further comprises rotating the engine during said streaming.

28. The method of any of claims 1 and 2 to 27 wherein the gas turbine engine is installed on an aircraft and said operating is on the aircraft.

29. The method of any of claims 1 and 2 to 27 wherein the gas turbine engine is installed in an engine test cell and said operating is in the engine test cell.

30. A method for providing a foamed liquid cleaning agent to a gas turbine engine, comprising:

operating a gas turbine engine;

measuring the performance of the gas turbine engine during said operating;

determining that the gas turbine engine should be foam washed based on the measured performance;

operating a source of a liquid cleaning agent, a liquid pump, and a source of pressurized gas;

mixing pressurized gas with pressurized liquid and creating a supply of foam;

streaming the supply of foam into the gas turbine engine.

31. The method of claim 30 which further comprises providing the measured performance by telemetry to a data center.

32. The method of claim 31 wherein said scheduling a foam cleaning of the engine is by the data center.

33. The method of claim 30 wherein the engine has an owner and said determining is by the owner of the engine.

34. The method of claim 30 wherein the engine has an operator and said determining is by the operator of the engine.

35. The method of claim 30 wherein said measuring includes measuring the start time of the engine and said determining is based on said measuring.

36. The method of claim 30 wherein said measuring includes measuring the fuel consumption of the engine and said determining is based on said measuring.

37. The method of claim 30 wherein said measuring includes measuring the rotor speed of the engine and said determining is based on said measuring.

38. The method of claim 30 wherein said measuring includes measuring the exhaust pressure of the engine and said determining is based on said measuring.

39. The method of claim 30 wherein said measuring includes measuring the turbine temperature of the engine required to achieve a particular power output and said determining is based on said measuring.

40. The method of claim 30 wherein said measuring includes measuring the operating speed of the engine at cruise and said determining is based on said measuring.

41. The method of claim 30 wherein said measuring includes measuring the time on wing of the engine and said determining is based on said measuring.

42. The method of claim 30 wherein the measured performance is provided by telemetry, and which further comprises scheduling a foam cleaning of the engine.

43. The method of claim 30 wherein the measured performance is provided by telemetry, and said scheduling is based on said determining.

44. The method of claim 30 which further comprises providing the measured performance by telemetry, wherein said determining includes using the measured performance provided by telemetry.

45. The method of claim 30 wherein said determining includes comparing the measure performance to the quantified range of improvement.

46. The method of claim 30 wherein said determining is at least partly based on carbon emissions of the engine.

47. The method of claim 30 wherein said determining is at least partly based on oxides of nitrogen emissions of the engine.

48. The method of claim 30 wherein said streaming the supply of foam is to a bleed air duct of the gas turbine engine.

49. The method of claim 30 wherein said streaming the supply of foam is to a manifold of tubing mounted to the gas turbine engine.

50. The method of claim 30 wherein the gas turbine engine has an air inlet and said streaming foam is into the air inlet.

51. The method of claim 50 wherein the gas turbine engine has a hot section and which further comprises cleaning the hot section by said streaming foam into the air inlet.

52. The method of claim 30 wherein the gas turbine engine has a compressor and said streaming foam is into the compressor.

53. The method of claim 52 wherein the gas turbine engine has a hot section and which further comprises cleaning the hot section by said streaming foam into the compressor.

54. The method of claim 30 wherein said streaming is through a non-atomizing nozzle.

55. The method of claim 30 which further comprises rotating the engine during said streaming.

56. The method of any of claims 30 to 55 wherein the gas turbine engine is installed on an aircraft and said operating is on the aircraft.

57. The method of any of claims 30 to 55 wherein the gas turbine engine is installed in an engine test cell and said operating is in the engine test cell.

58. The method of claim 30 wherein the streamed supply of foam is at a velocity greater than about three feet per second and less than about fifteen feet per second.

59. The method of claim 30 wherein the streamed supply of foam is a unitary stream of substantially constant diameter.

60. The method of claim 30 wherein said mixing includes flowing the cleaning liquid in a first direction and injecting the pressurized gas in a second direction that has a velocity component at least partly opposite to the first direction.

61. The method of claim 30 wherein said operating includes a turbulence-reducing chamber and which further comprises reducing the turbulence of the created foam.

62. The method of claim 30 wherein said mixing chamber includes a gas-pressurized plenum having a plurality of gasflow apertures and located within a chamber provided with a flow of the cleaning liquid, the apertures expelling gas into the flowing cleaning liquid to create the foam.

63. The method of claim 30 wherein said operating includes a cell growth chamber and which further comprises growing the size of the cells of the created foam.

64. The method of claim 30 wherein said mixing includes creating a supply of a first foam, and which further comprises increasing the size of the cells of the first foam to form a second foam; and decreasing the size of the cells of the second foam to form a third foam, wherein said streaming the supply of foam is streaming a supply of the third foam.