CLAIMS

1. A gas turbine engine comprising:

a core engine defined about an axis;

a gear system driven by said core engine, said gear system defines a gear reduction ratio that can be as low as about 2.3;

a fan driven by said gear system about said axis to generate a bypass flow; and

a variable area flow system which operates to effect said bypass flow.

2. The engine as recited in claim 1, wherein said variable area flow system includes an annular fan variable area nozzle (FVAN).

3. The engine as recited in claim 1, further comprising a gear system driven by said core engine to drive said fan, said gear system defines a gear reduction ratio of greater than or equal to about 2.5.

4. The engine as recited in claim 1, further comprising a gear system driven by said core engine to drive said fan, said gear system defines a gear reduction ratio of greater than or equal to 2.5.

5. The engine as recited in claim 1, wherein said core engine includes a low pressure turbine which defines a pressure ratio that is greater than about five (5).

6. The engine as recited in claim 1, wherein said core engine includes a low pressure turbine which defines a pressure ratio that is greater than five (5).

7. The engine as recited in claim 1, wherein said bypass flow defines a bypass ratio that can be as low as about six (6).

8. The engine as recited in claim 1, wherein said bypass flow defines a bypass ratio greater than about ten (10).

9. The engine as recited in claim 1, wherein said bypass flow defines a bypass ratio greater than ten (10).

10. The engine as recited in claim 1, wherein said variable area flow system operates to change a pressure ratio of the bypass flow.

11. The engine as recited in claim 1, wherein said variable area flow system operates to vary an area of a fan nozzle exit area for said bypass flow.

12. The engine as recited in claim 1, wherein said fan is defined for a predefined flight condition.

13. The engine as recited in claim 12, wherein said predefined flight condition is about 0.8 MACH and about 35,000 feet.

14. The engine as recited in claim 12, wherein said predefined flight condition is 0.8 MACH and 35,000 feet.

15. The engine as recited in claim 12, wherein said fan includes fan blades designed at a particular fixed stagger angle related to said flight condition.

16. The engine as recited in claim 15, wherein said variable area flow system operates to adjust the bypass flow such that an angle of attack of said fan blades are maintained close to a design incidence at flight conditions other than said predefined flight condition.

17. A gas turbine engine comprising:

a core engine defined about an axis, said core engine includes a low pressure turbine which defines a pressure ratio that is greater than about five (5);

a fan driven by said core engine about said axis to generate a bypass flow which defines a bypass ratio that can be as low as about six (6); and

a variable area flow system which operates to effect said bypass flow.

18. The engine as recited in claim 17, wherein said variable area flow system includes an annular fan variable area nozzle (FVAN).

19. The engine as recited in claim 17, wherein said core engine includes a low pressure turbine which defines a pressure ratio that is greater than five (5).

20. The engine as recited in claim 17, further comprising a gear system driven by said core engine to drive said fan, said gear system defines a gear reduction ratio of greater than or equal to about 2.5.

21. The engine as recited in claim 17, further comprising a gear system driven by said core engine, and wherein said gear system defines a gear reduction ratio that can be as low as about 2.3.

22. The engine as recited in claim 17, wherein said bypass flow defines a bypass ratio greater than about ten (10).

23. The engine as recited in claim 17, wherein said bypass flow defines a bypass ratio greater than ten (10).

24. The engine as recited in claim 17, wherein said variable area flow system operates to change a pressure ratio of the bypass flow.

25. The engine as recited in claim 17, wherein said variable area flow system operates to vary an area of a fan nozzle exit area for said bypass flow.

26. The engine as recited in claim 17, wherein said fan is defined for a predefined flight condition.

27. The engine as recited in claim 26, wherein said flight condition is about 0.8 MACH and about 35,000 feet.

28. The engine as recited in claim 27, wherein said fan includes fan blades designed at a particular fixed stagger angle related to said predefined flight condition.

29. The engine as recited in claim 28, wherein said variable area flow system operates to adjust the bypass flow such that an angle of attack of said fan blades are maintained close to a design incidence at flight conditions other than said predefined flight condition.

CLAIMS

1. A gas turbine engine comprising:

a core engine defined about an axis;

a gear system driven by said core engine, said gear system defines a gear reduction ratio that can be as low as about 2.3;

a fan driven by said gear system about said axis to generate a bypass flow that defines a bypass ratio that can be as low as about six (6); and

a variable area flow system which operates to effect said bypass flow.

2. The engine as recited in claim 1, wherein said variable area flow system includes an annular fan variable area nozzle (FVAN).

3. The engine as recited in claim 1, further comprising a gear system driven by said core engine to drive said fan, said gear system defines a gear reduction ratio of greater than or equal to about 2.5.

4. The engine as recited in claim 1, further comprising a gear system driven by said core engine to drive said fan, said gear system defines a gear reduction ratio of greater than or equal to 2.5.

5. The engine as recited in claim 1, wherein said core engine includes a low pressure turbine which defines a pressure ratio that is greater than about five (5).

6. The engine as recited in claim 1, wherein said core engine includes a low pressure turbine which defines a pressure ratio that is greater than five (5).

7. The engine as recited in claim 1, wherein said bypass flow defines a bypass ratio greater than about ten (10).

8. The engine as recited in claim 1, wherein said bypass flow defines a bypass ratio greater than ten (10).

9. The engine as recited in claim 1, wherein said variable area flow system operates to change a pressure ratio of the bypass flow.

10. The engine as recited in claim 1, wherein said variable area flow system operates to vary an area of a fan nozzle exit area for said bypass flow.

11. The engine as recited in claim 1, wherein said fan is defined for a predefined flight condition.

12. The engine as recited in claim 11, wherein said predefined flight condition is about 0.8 MACH and about 35,000 feet.

13. The engine as recited in claim 11, wherein said predefined flight condition is 0.8 MACH and 35,000 feet.

14. The engine as recited in claim 11, wherein said fan includes fan blades designed at a particular fixed stagger angle related to said flight condition.

15. The engine as recited in claim 14, wherein said variable area flow system operates to adjust the bypass flow such that an angle of attack of said fan blades are maintained close to a design incidence at flight conditions other than said predefined flight condition.

16. A gas turbine engine comprising:

a core engine defined about an axis, said core engine includes a low pressure turbine which defines a pressure ratio that is greater than about five (5);

a fan driven by said core engine about said axis to generate a bypass flow which defines a bypass ratio that can be as low as about six (6); and

a variable area flow system which operates to effect said bypass flow.

17. The engine as recited in claim 16, wherein said variable area flow system includes an annular fan variable area nozzle (FVAN).

18. The engine as recited in claim 16, wherein said core engine includes a low pressure turbine which defines a pressure ratio that is greater than five (5).

19. The engine as recited in claim 16, further comprising a gear system driven by said core engine to drive said fan, said gear system defines a gear reduction ratio of greater than or equal to about 2.5.

20. The engine as recited in claim 16, further comprising a gear system driven by said core engine, and wherein said gear system defines a gear reduction ratio that can be as low as about 2.3.

21. The engine as recited in claim 16, wherein said bypass flow defines a bypass ratio greater than about ten (10).

22. The engine as recited in claim 16, wherein said bypass flow defines a bypass ratio greater than ten (10).

23. The engine as recited in claim 16, wherein said variable area flow system operates to change a pressure ratio of the bypass flow.

24. The engine as recited in claim 16, wherein said variable area flow system operates to vary an area of a fan nozzle exit area for said bypass flow.

25. The engine as recited in claim 16, wherein said fan is defined for a predefined flight condition.

26. The engine as recited in claim 25, wherein said flight condition is about 0.8 MACH and about 35,000 feet.

27. The engine as recited in claim 26, wherein said fan includes fan blades designed at a particular fixed stagger angle related to said predefined flight condition.

28. The engine as recited in claim 27, wherein said variable area flow system operates to adjust the bypass flow such that an angle of attack of said fan blades are maintained close to a design incidence at flight conditions other than said predefined flight condition.