CLAIMS

1. A turbine section of a gas turbine engine comprising:

a first turbine section; and

a second turbine section,

wherein said first turbine section has a first exit area at a first exit point and rotates at a first speed,

wherein said second turbine section has a second exit area at a second exit point and rotates at a second speed, which is faster than the first speed,

wherein a first performance quantity is defined as the product of the first speed squared and the first area,

wherein a second performance quantity is defined as the product of the second speed squared and the second area, and

wherein a ratio of the first performance quantity to the second performance quantity is between about 0.5 and about 1.5.

2. The turbine section as set forth in claim 1, wherein said ratio is above or equal to about 0.8.

3. The turbine section as set forth in claim 1, wherein said first turbine section has at least 3 stages.

4. The turbine section as set forth in claim 1, wherein said first turbine section has up to 6 stages.

5. The turbine section as set forth in claim 1, wherein said second turbine section has 2 or fewer stages.

6. The turbine section as set forth in claim 1, wherein a pressure ratio across the first turbine section is greater than about 5:1.

7. A gas turbine engine comprising:

a fan;

a compressor section in fluid communication with the fan;

a combustion section in fluid communication with the compressor section;

a turbine section in fluid communication with the combustion section,

wherein the turbine section includes a first turbine section and a second turbine section,

wherein said first turbine section has a first exit area at a first exit point and rotates at a first speed,

wherein said second turbine section has a second exit area at a second exit point and rotates at a second speed, which is higher than the first speed,

wherein a first performance quantity is defined as the product of the first speed squared and the first area,

wherein a second performance quantity is defined as the product of the second speed squared and the second area, and

wherein a ratio of the first performance quantity to the second performance quantity is between about 0.5 and about 1.5.

8. The engine as set forth in claim 1, wherein said ratio is above or equal to about 0.8.

9. The engine as set forth in claim 1, wherein the compressor section includes a first compressor section and a second compressor section, wherein the first turbine section and the first compressor section rotate in a first direction, and wherein the second turbine section and the second compressor section rotate in a second opposed direction.

10. The engine as set forth in claim 7, wherein a gear reduction is included between said fan and a low spool driven by the first turbine section such that the fan rotates at a lower speed than the first turbine section.

11. The engine as set forth in claim 10, wherein said fan rotates in the second opposed direction.

12. The engine as set forth in claim 10, wherein a gear ratio of said gear reduction is greater than about 2.3.

13. The engine as set forth in claim 12, wherein said gear ratio is greater than about 2.5.

14. The engine as set forth in claim 7, wherein said ratio is above or equal to about 1.0.

15. The engine as set forth in claim 9, wherein said fan delivers a portion of air into a bypass duct, and a bypass ratio being defined as the portion of air delivered into the bypass duct divided by the amount of air delivered into the first compressor section, with the bypass ratio being greater than about 6.0.

16. The engine as set forth in claim 15, wherein said bypass ratio is greater than about 10.0.

17. The engine as set forth in claim 7, wherein said fan has 26 or fewer blades.

18. The engine as set forth in claim 7, wherein said first turbine section has at least 3 stages.

19. The engine as set forth in claim 7, wherein said first turbine section has up to 6 stages.

20. The engine as set forth in claim 7, wherein a pressure ratio across the first turbine section is greater than about 5:1.

CLAIMS

1. A turbine section of a gas turbine engine comprising:

a first turbine section; and

a second turbine section independently operable to the first;

wherein said first turbine section has a first exit area at a first exit point and rotates at a first speed,

wherein said second turbine section has a second exit area at a second exit point and rotates at a second speed, which is faster than the first speed,

wherein a first performance quantity is defined as the product of the first speed squared and the first area,

wherein a second performance quantity is defined as the product of the second speed squared and the second area, and

wherein a ratio of the first performance quantity to the second performance quantity is between about 0.5 and about 1.5.

2. The turbine section as set forth in claim 1, wherein said ratio is above or equal to about 0.8.

3. The turbine section as set forth in claim 1, wherein said first turbine section has at least 3 stages.

4. The turbine section as set forth in claim 1, wherein said first turbine section has up to 6 stages.

5. The turbine section as set forth in claim 1, wherein said second turbine section has 2 or fewer stages.

6. The turbine section as set forth in claim 1, wherein a pressure ratio across the first turbine section is greater than about 5:1.

7. A gas turbine engine comprising:

a fan;

a compressor section in fluid communication with the fan;

a combustion section in fluid communication with the compressor section;

a turbine section in fluid communication with the combustion section,

wherein the turbine section includes a first turbine section and a second turbine section,

wherein said first turbine section has a first exit area at a first exit point and rotates at a first speed,

wherein said second turbine section has a second exit area at a second exit point and rotates at a second speed, which is higher than the first speed,

wherein a first performance quantity is defined as the product of the first speed squared and the first area,

wherein a second performance quantity is defined as the product of the second speed squared and the second area, and

wherein a ratio of the first performance quantity to the second performance quantity is between about 0.5 and about 1.5.

8. The engine as set forth in claim 1, wherein said ratio is above or equal to about 0.8.

9. The engine as set forth in claim 1, wherein the compressor section includes a first compressor section and a second compressor section, wherein the first turbine section and the first compressor section rotate in a first direction, and wherein the second turbine section and the second compressor section rotate in a second opposed direction.

10. The engine as set forth in claim 7, wherein a gear reduction is included between said fan and a low spool driven by the first turbine section such that the fan rotates at a lower speed than the first turbine section.

11. The engine as set forth in claim 10, wherein said fan rotates in the second opposed direction.

12. The engine as set forth in claim 10, wherein a gear ratio of said gear reduction is greater than about 2.3.

13. The engine as set forth in claim 12, wherein said gear ratio is greater than about 2.5.

14. The engine as set forth in claim 7, wherein said ratio is above or equal to about 1.0.

15. The engine as set forth in claim 9, wherein said fan delivers a portion of air into a bypass duct, and a bypass ratio being defined as the portion of air delivered into the bypass duct divided by the amount of air delivered into the first compressor section, with the bypass ratio being greater than about 6.0.

16. The engine as set forth in claim 15, wherein said bypass ratio is greater than about 10.0.

17. The engine as set forth in claim 7, wherein said fan has 26 or fewer blades.

18. The engine as set forth in claim 7, wherein said first turbine section has at least 3 stages.

19. The engine as set forth in claim 7, wherein said first turbine section has up to 6 stages.

20. The engine as set forth in claim 7, wherein a pressure ratio across the first turbine section is greater than about 5:1.