CLAIMS

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

a fan drive turbine section; and

a second turbine section,

wherein said fan drive turbine section has a first exit area at a first exit point and is configured to rotate at a first speed,

wherein said second turbine section has a second exit area at a second exit point and is configured to rotate 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;

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

said second turbine section driving a first shaft, and said first shaft being supported on a bearing, with said bearing being mounted on an outer periphery of a second shaft driven by said fan drive turbine section.

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

3. The turbine section as set forth in claim 1, wherein said fan drive turbine section has between 3 and 6 stages.

4. The turbine section as set forth in claim 1, wherein said second turbine section has one or two stages.

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

6. The turbine section as set forth in claim 1, wherein said first shaft is supported on a second bearing on its outer periphery, with said second bearing being mounted to static structure.

7. The turbine section as set forth in claim 1, wherein said fan drive and second turbine sections rotating in opposed directions.

8. The turbine section as set forth in claim 1, wherein there is no bearing support structure positioned intermediate said fan drive and second turbine sections.

9. 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 fan drive turbine section and a second turbine section,
wherein said fan drive turbine section has a first exit area at a first exit point and is configured to rotate at a first speed,
wherein said second turbine section has a second exit area at a second exit point and is configured to rotate 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;
wherein a ratio of the first performance quantity to the second performance quantity is between 0.5 and 1.5;
said second turbine section driving a first shaft, and said first shaft being mounted on a bearing, with said bearing being mounted on an outer periphery of a second shaft which is driven by said fan drive turbine section.

10. The engine as set forth in claim 9, wherein said ratio is above or equal to 0.8.

11. The engine as set forth in claim 9, wherein the compressor section includes a first compressor section and a second compressor section, wherein the fan drive turbine section and the first compressor section are configured to rotate in a first direction, and wherein the second turbine section and the second compressor section are configured to rotate in a second opposed direction.

12. The engine as set forth in claim 11, wherein a gear reduction is included between said fan and said second shaft driven by the fan drive turbine section such that the fan rotates at a lower speed than the fan drive turbine section.

13. The engine as set forth in claim 12, wherein said fan rotates in the second opposed direction.

14. The engine as set forth in claim 11, wherein said second shaft is supported on a second bearing on its outer periphery, with said second bearing being mounted to static structure.

15. The engine as set forth in claim 14, wherein a third bearing supports said second compressor section on an outer periphery of said first shaft driven by said second turbine section.

16. The engine as set forth in claim 15, wherein a fourth bearing is positioned adjacent said first compressor section, and supports an outer periphery of said second shaft which is configured to rotate with said fan drive turbine section.

17. The engine as set forth in claim 11, wherein there is no bearing support structure positioned intermediate said first and second turbine sections.

18. 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 fan drive turbine section and a second turbine section,

wherein said fan drive turbine section has a first exit area at a first exit point and is configured to rotate at a first speed,

wherein said second turbine section has a second exit area at a second exit point and is configured to rotate 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;

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

the compressor section including a first compressor section and a second compressor section, wherein the fan drive turbine section and the first compressor section will rotate in a first direction and the second turbine section and the second compressor section will rotate in a second opposed direction, a gear reduction included between said fan and first compressor section, such that the fan will rotate at a lower speed than the fan drive turbine section, and said fan will rotate in the second opposed direction.

19. The engine as set forth in claim 18, wherein a gear ratio of said gear reduction is greater than 2.3.