CLAIMS

~~What is claimed is:~~

1. A gas turbine engine comprising:

a fan section including a plurality of fan blades, with a low fan pressure ratio of less than about 1.45, the low fan pressure ratio measured across the fan blades alone;

a bypass ratio greater than 10;

a gear train having a gear ratio greater than about 2.3;

a compressor section;

a combustor in fluid communication with the compressor section;

a turbine section in fluid communication with the combustor and including a fan drive turbine and a second turbine, the fan drive turbine driving a fan rotor through the gear train wherein:

the fan drive turbine includes a first aft rotor attached to a first shaft, the second turbine includes a second aft rotor attached to a second shaft, the second turbine includes at least two stages and the fan drive turbine includes more than two stages and a first bearing assembly is disposed axially aft of a first connection between the first aft rotor and the first shaft, and a second bearing assembly is disposed axially forward of a second connection between the second aft rotor and the second shaft~~engine includes a power density greater than 4.0 lbf/in3 wherein power density is defined as Sea Level Takeoff Thrust in lbf produced divided by a volume of the turbine section in cubic inches; and~~

~~the fan drive turbine includes at least one rotor having a live rim radius (r) and a bore width (W), and a ratio of W/r is between 4.65 and 5.55~~.

2. The gas turbine engine as recited in claim 1, wherein the fan drive turbine includes an inlet, an outlet, and a fan drive turbine pressure ratio greater than 5, wherein the fan drive turbine pressure ratio is a ratio of a pressure measured prior to the inlet as related to a pressure at the outlet prior to any exhaust nozzle.

3. The gas turbine engine as recited in claim 2, wherein the fan drive turbine has a first exit area and is configured to rotate at a first speed, the second turbine has a second exit area 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, a second performance quantity is defined as the product of the second speed squared and the second area, and a performance ratio of the first performance quantity to the second performance quantity is between 0.5 and 1.5.

4. The gas turbine engine as recited in claim 3, wherein the fan drive turbine has a number of fan drive turbine stages, and a ratio between a number of the fan blades and the number of fan drive turbine stages is between 2.5 and 8.5.

5. The gas turbine engine as recited in claim 4, wherein the plurality of fan blades is less than 18 fan blades.

6. The gas turbine engine as recited in claim 4, wherein the performance ratio is greater than or equal to 0.8.

~~7. The gas turbine engine as recited in claim 5, wherein the power density is less than or equal to 5.5 lbf/in3.~~

~~8. The gas turbine engine as recited in claim 5, wherein the power density is less than or equal to 5.5 lbf/in3, and the performance ratio is greater than or equal to 1.0.~~

~~9~~7. The gas turbine engine as recited in claim 1, wherein the second turbine is a two stage turbine.

~~10~~8. The gas turbine engine as recited in claim ~~8~~1, wherein the fan section has a low corrected fan tip speed less than 1150 ft/sec, wherein the low corrected fan tip speed is an actual fan tip speed divided by [(Tram °R) / (518.7 °R)]^0.5.

~~11~~9. The gas turbine engine as recited in claim ~~9~~7, further comprising a mid-turbine frame between the fan drive turbine and the second turbine, the mid-turbine frame supporting at least one bearing assembly and including at least one vane.

~~12. The gas turbine engine as recited in claim 1, wherein the at least one rotor having a bore radius (R), and a ratio of r/R is between 2.00 and 2.30.~~

~~13. The gas turbine engine as recited in claim 1, wherein the fan drive turbine includes a first aft rotor attached to a first shaft, the second turbine includes a second aft rotor attached to a second shaft, the second turbine includes at least two stages and the fan drive turbine includes more than two stages and a first bearing assembly is disposed axially aft of a first connection between the first aft rotor and the first shaft, and a second bearing assembly is disposed axially aft of a second connection between the second aft rotor and the second shaft.~~

~~14. A gas turbine engine comprising:~~

~~a compressor section including a first compressor section and a second compressor section; a combustor in fluid communication with the compressor section;~~

~~a turbine section in fluid communication with the combustor, the turbine section including a fan drive turbine including a plurality of turbine rotors and coupled to drive the first compressor section through a first shaft, and a second turbine coupled to drive the second compressor section through a second shaft;~~

~~a fan including a plurality of blades rotatable about an axis; and~~

~~a speed change system driven by the fan drive turbine for rotating the fan about the axis;~~

~~wherein the fan drive turbine includes a first aft rotor attached to the first shaft and the second turbine includes a second aft rotor attached to the second shaft and the second turbine includes at least two stages and the fan drive turbine includes more than two stages; and~~

~~wherein a first bearing assembly is disposed axially aft of a first connection between the first aft rotor and the first shaft, and a second bearing assembly is disposed axially aft of a second connection between the second aft rotor and the second shaft.~~

~~15. The gas turbine engine as recited in claim 14, wherein the fan drive turbine has a number of fan drive turbine stages, and a ratio between a number of the fan blades and the number of fan drive turbine stages is between 2.5 and 8.5.~~

~~16. The gas turbine engine as recited in claim 14, wherein the fan drive turbine includes at least one rotor having a live rim radius (r), a bore radius (R) and a bore width (W), and a ratio of W/r is between 4.65 and 5.55 and a ratio of r/R is between 2.00 and 2.30.~~