WHAT IS CLAIMED IS:

1. A device, comprising:

a memory (122) configured to store a tail-specific aircraft performance model (181) for a first aircraft (108) of an aircraft type (187), the tail-specific aircraft performance model (181) based on historical flight data (107) of the first aircraft (108) and a nominal aircraft performance model (185) associated with a second aircraft of the aircraft type (187);

a network interface (130) configured to receive flight data (105) during a flight from a databus (140) of the first aircraft (108); and

a processor (170) configured to:

generate, based at least in part on the flight data (105) and the tail-specific aircraft performance model (181), a recommended cost index (193) and a recommended cruise altitude (195);

provide the recommended cost index (193) and the recommended cruise altitude (195) for the flight to a display device (144);

receive a user input indicating a selected cost index; and

generate, based on the selected cost index, a control command to update an altitude, a speed, or both, of the first aircraft.

2. The device of claim 1, wherein operation of the first aircraft (108) based on the recommended cost index (193) and the recommended cruise altitude (195) balances time-related costs and fuel-related costs to reduce overall operating cost of the first aircraft (108) relative to operation of the first aircraft based on a target cost index.

3. The device of claim 1 or 2, wherein the processor (170) is further configured to determine an implicit cost index (455) of a flight, wherein the recommended cost index (193) is based on the implicit cost index (455), and wherein the implicit cost index (455) is based on a reported gross weight (204, 264, 453) of the first aircraft (108) during the flight, a detected Mach number (202) of the first aircraft (108) during the flight, a detected ground speed (220) of the first aircraft (108) during the flight, a detected airspeed (238) of the first aircraft (108) during the flight, a detected pressure altitude (206) of the first aircraft (108) during the flight, a detected air temperature (208, 230) outside the first aircraft (108) during the flight, or a combination thereof.

4. The device of any one of claims 1 to 3, wherein the processor (170) is further configured to determine an estimated gross weight (453) of the first aircraft (108) during a flight, the estimated gross weight (453) based on a fuel weight (224) of the first aircraft (108) during the flight, a reference fuel weight, an estimated fuel flow (461) during the flight, a high gross weight indicator for the flight, a detected pressure altitude (206) of the first aircraft (108) during the flight, a detected air temperature (208, 230) outside the first aircraft (108) during the flight, a detected Mach number (202) of the first aircraft (108) during the flight, a detected angle of attack (228) of the first aircraft (108) during the flight, a detected stabilizer trim setting (226) of the first aircraft (108) during the flight, or a combination thereof, wherein the recommended cost index (193) is based on the estimated gross weight (453).

5. The device of claim 4, wherein the processor (170) is further configured to determine the recommended cost index (193) based on an estimated minimum operating cost (416) of the first aircraft (108) during the flight, the estimated gross weight (453), the detected pressure altitude (206), or a combination thereof.

6. The device of any one of claims 1 to 5, wherein the recommended cruise altitude (195) corresponds to a predicted minimum operating cost cruise altitude (574) of the first aircraft (108), wherein the recommended cruise altitude (195) is based on estimated cost indices (558) associated with a plurality of cruising altitudes (554), wherein an estimated cost index (568) of the estimated cost indices (558) is associated with the predicted minimum operating cost cruise altitude (574), and wherein the estimated cost index (568) is based on an estimated gross weight (544) of the first aircraft (108) during a flight.

7. The device of any one of claims 1 to 6, wherein the memory (122), the network interface (130), and the processor (170) are integrated into the first aircraft (108).

8. The device of any one of claims 1 to 7, wherein the memory (122), the network interface (130), and the processor (170) are integrated into a portable Electronic Flight Bag (EFB) computer.

9. The device of claim 1, wherein the processor (170) is further configured to generate the tail-specific aircraft performance model (181) by modifying the nominal aircraft performance model (185) based on the historical flight data (107) of the first aircraft (108).

10. The device of any one of claims 1 to 8, wherein the nominal aircraft performance model (185) is based on second flight data of the second aircraft, and wherein the processor (170) is configured to determine whether to modify the nominal aircraft performance model (185) based on the historical flight data (107) of the first aircraft (108) based on determining whether the historical flight data (107) satisfies a filter criterion (301, 303).

11. The device of claim 10, wherein the processor (170) is further configured, prior to determining whether the historical flight data (107) satisfies the filter criterion (301, 303), sort the historical flight data (107) based on a difference between a pressure altitude (206) of the first aircraft (108) and a target pressure altitude (315), and wherein the historical flight data (107) indicates the pressure altitude (206) of the first aircraft (108).

12. The device of claim 10 or 11, wherein the processor (170) is further configured to determine whether the historical flight data (107) satisfies the filter criterion (301, 303) based on a comparison of a pressure altitude (206) of the first aircraft (108) and an altitude threshold (353), and wherein the historical flight data (107) indicates the pressure altitude (206) of the first aircraft (108).

13. The device of any one of claims 10 to 12, wherein the processor (170) is further configured to determine whether the historical flight data (107) satisfies the filter criterion (301, 303) based on a comparison of a reported gross weight (204, 264) of the first aircraft (108) and a gross weight threshold (355), and wherein the historical flight data (107) indicates the reported gross weight (204, 264) of the first aircraft (108).

14. The device of any one of claims 10 to 13, wherein the processor (170) is further configured to determine whether the historical flight data (107) satisfies the filter criterion (301, 303) based on a comparison of an altitude change threshold and a difference between a first pressure altitude (206) of the first aircraft (108) and a second pressure altitude (206) of the first aircraft (108), wherein the historical flight data (107) indicates the first pressure altitude (206) and the second

pressure altitude (206), wherein the first pressure altitude (206) is associated with a first data collection time, and wherein the second pressure altitude (206) is associated with a second data collection time.

15. The device of claim any one of claims 10 to 14, wherein the processor (170) is further configured to determine whether the historical flight data (107) satisfies the filter criterion (301, 303) based on a comparison of a fuel flow change threshold and a difference between a first fuel flow (222) of the first aircraft (108) and a second fuel flow (222) of the first aircraft (108), wherein the historical flight data (107) indicates the first fuel flow (222) and the second fuel flow (222), wherein the first fuel flow (222) is associated with a first data collection time, and wherein the second fuel flow (222) is associated with a second data collection time.

16. The device of any one of claims 10 to 15, wherein the processor (170) is further configured to determine whether the historical flight data (107) satisfies the filter criterion (301, 303) based on a comparison of an angle of attack change threshold and a difference between a first angle of attack (228) associated with the first aircraft (108) and a second angle of attack (228) associated with the first aircraft (108), wherein the historical flight data (107) indicates the first angle of attack (228) and the second angle of attack (228), wherein the first angle of attack (228) is associated with a first data collection time, and wherein the second angle of attack (228) is associated with a second data collection time.

17. The device of any one of claims 10 to 16, wherein the processor (170) is further configured to:

determine an average fuel mileage (369) based on the historical flight data (107); and

determine whether the historical flight data (107) satisfies the filter criterion (301, 303) based on a comparison of a fuel mileage (282) indicated by the historical flight data (107) and a fuel mileage threshold (375), wherein the fuel mileage threshold (375) is based on the average fuel mileage (369).

18. A method, comprising:

receiving, at a device, flight data during a flight (105) from a databus (140) of a first aircraft (108) of an aircraft type (187);

generating, based at least in part on the flight data (105) and a tail-specific aircraft performance model (181), a recommended cost index (193) and a recommended cruise altitude (195), the tail-specific aircraft performance model (181) based on historical flight data (107) of the first aircraft (108) and a nominal aircraft performance model (185) associated with a second aircraft of the aircraft type (187);

providing the recommended cost index (193) and the recommended cruise altitude (195) for the flight from the device to a display device (144) of the first aircraft (108);

receiving a user input indicating a selected cost index; and

generating, based on the selected cost index, a control command to update an altitude, a speed, or both, of the first aircraft.

19. The method of claim 18, further comprising updating the tail-specific aircraft performance model (181) based on the flight data (105).

20. A computer-readable storage device storing instructions that, when executed by a processor (170), cause the processor (170) to perform operations comprising:

receiving flight data during a flight (105) from a databus (140) of a first aircraft (108) of an aircraft type (187);

generating, based at least in part on the flight data (105) and a tail-specific aircraft performance model (181), a recommended cost index (193) and a recommended cruise altitude (195), the tail-specific aircraft performance model (181) based on historical flight data (107) of the first aircraft (108) and a nominal aircraft performance model (185) associated with a second aircraft of the aircraft type (187);

providing the recommended cost index (193) and the recommended cruise altitude (195) for the flight to a display device (144) of the first aircraft (108);

receiving a user input indicating a selected cost index; and

generating, based on the selected cost index, a control command to update an altitude, a speed, or both, of the first aircraft.