

Quiet Wing Performance kit for the B737-3,4,500 series aircraft.

Operational overview

Flap settings:

- 1) The QW performance kit increases the aerodynamic efficiency of the wing by changing the wing camber through a permanent offset in the aft trailing edge flaps and re-rigging of the ailerons
- 2) The increased aerodynamic efficiency of the wing allows for the creation of a new takeoff flap setting designated Flaps 1*.
- 3) This is a pilot selectable takeoff flap setting that can only be activated when the aircraft is on the ground. When selected, the trailing edge flaps remain in the “up” position and the leading edge moves out to an intermediate position.
- 4) New takeoff performance tables are provided as part of the AFM amendment that document the improved payload/climb limit of the aircraft under all conditions
- 5) The QW flaps 0/1* position is identical to the current mechanical flaps up stop on the flap lever quadrant. In this position, the trailing edge flaps maintain a droop as part of the QW mod.
- 6) During climb out with flaps 1* selected, normal flaps retraction is called out by the flight crew and the flaps 1* switch is moved into the off position. This retracts the leading edge and the aircraft is now configured for normal climb-out.

AFM

The AFM supplement addresses flaps 1* operation, abnormal/emergency operations and provides a complete new set of takeoff tables.

1* selection

This is a new pilot selectable flap setting and when activated, allows takeoff with only the leading edge deployed to the standard Boeing position. It can only be activated when the aircraft is on the ground. The 1* selection is made to allow the aircraft to take off and climb at far higher gross weights. In this configuration, the flap lever remains at flaps 0/1*. However, should it be required, full range of flap settings is still available to the flight crew. On reaching the normal flap retraction profile, the flight crew de-select the 1* position

N1 settings

- a) With the QW performance kit installed, the N1 setting required to attain various phases of flight can be reduced. This aids in overall fuel consumption and can have a major impact on engine life and maintenance costs.
- b) When operating at gross weights below maximum, the optimum N1 setting can be viewed on the FMS by selecting one engine rating lower than the aircraft is actually equipped with. For instance, if the aircraft has C2 engines, selecting B1 power will give a lower N1 setting for takeoff thrust.

Fuel Savings

The permanent droop of the trailing edge flaps aids in the overall drag reduction and aerodynamic efficiency of the wing throughout all phases of flight. This drag reduction aids in lowering fuel usage in the region of 2% to 4%. Actual fuel savings are also a function of stage length, ATC restrictions, weather, airframe and engine condition and flight crew operations.