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DEPARTMENT OF AEROSPACE ENGINEERING

19ASB303 AIRCRAFT MAINTENANCE ENGINEERING

UNIT V – AIRCRAFT MAINTENANCE

Maintenance sharing - Aircraft weight control - Budgetary control.

Aircraft Weight Control

Aircraft weight control is a critical aspect of aviation safety and efficiency. Proper weight and balance control ensures that an aircraft operates within its design limits, enhancing safety and performance. Here are some key points related to aircraft weight control:

Weight and Balance Parameters:

- **Operational Empty Weight (OEW):** This is the weight of the aircraft when it is empty, excluding passengers, cargo, and fuel. It includes the airframe, engines, and all permanently installed equipment.
- **Dynamic Weights:** These include passengers, cargo, fuel, and other items that change from flight to flight.

Regulatory Requirements:

- The Federal Aviation Administration (FAA) requires that aircraft be weighed and their weight and balance parameters be documented accurately. This includes reweighing the aircraft at specified intervals to account for modifications and repairs.

Impact of Weight Changes:

- Any changes to the aircraft's fixed equipment, repairs, or alterations can significantly affect its weight and balance. These changes must be documented and recalculated to ensure the aircraft remains within its operational limits.

Maintenance and Weighing:

- Aircraft weighing is often included in maintenance work packages. Maintenance organizations are responsible for ensuring the aircraft is properly configured and weighed according to approved maintenance data.

Budgetary Control in Aircraft Maintenance

Budgetary control in aircraft maintenance is essential for managing costs and ensuring operational efficiency. Here are some key aspects:

Costing Systems:

- Effective budgetary and costing systems are crucial for managing aircraft maintenance. These systems should account for all maintenance activities and their associated costs.

Activity-Based Costing (ABC):

- ABC is a costing method that assigns indirect costs to activities and then to products or services based on the activities they require. This method can provide a more accurate picture of maintenance costs and help in budgetary control.

Performance Metrics:

- Monitoring key performance indicators (KPIs) related to maintenance costs, such as cost per flight hour or maintenance cost per unit of service, can help in effective budgetary control.

Integration with Overall Organizational Budget:

- The maintenance budget should be integrated with the overall organizational budget to ensure alignment with the airline's strategic goals and financial objectives.

Maintenance Sharing

Maintenance sharing refers to the practice of sharing maintenance resources and responsibilities among multiple operators or entities. This can lead to cost savings and improved efficiency. Here are some considerations:

Resource Sharing:

- Sharing maintenance facilities, tools, and personnel can reduce costs and improve resource utilization. This is particularly beneficial for smaller operators who may not have the resources to maintain their own comprehensive maintenance infrastructure.

Standardization:

- Standardizing maintenance processes and documentation can facilitate maintenance sharing. This ensures that all parties involved follow the same procedures and standards, reducing the risk of discrepancies and errors.

Regulatory Compliance:

- Maintenance sharing must comply with regulatory requirements. This includes ensuring that all maintenance activities are performed by qualified personnel and that all documentation is accurate and up-to-date.

Cost Allocation:

- Clear and fair cost allocation mechanisms should be in place to ensure that all parties involved in maintenance sharing bear their share of the costs. This can be based on usage, fleet size, or other relevant factors.

By effectively managing aircraft weight control and budgetary control in maintenance, and by leveraging maintenance sharing, airlines can enhance safety, improve operational efficiency, and reduce costs.

BUDGETARY CONTROL

Characteristics of Budgetary Control



Weight & Balance Control

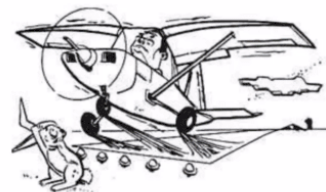
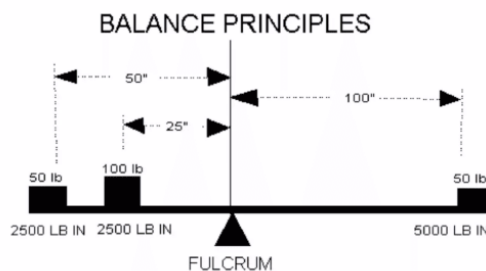


FIGURE 2. Overweight causes longer takeoff run.

