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ascend

Taking your airline to new heights

SkyTeam:



Caring More About You

A Conversation With
Leo van Wijk, Chairman,
SkyTeam

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increases airline revenues

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America aviation

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additional storefront



Aerodynamics Don't Change; Aircraft Load Planning Does

Strict aircraft and flight limits must be considered during flight preparation

Weight and balance and center of gravity are critical to legally and efficiently operating aircraft while reducing costs and maximizing revenue.

Photos: Shutterstock

■ By William Kikuchi, Dana Knight and
Dave Roberts | *Ascend* Contributors

Law of physics and aerodynamics that apply to aviation don't change. However, other components of flying, such as size, weight, distance flown and speed continually evolve (see related article on page 22). Therefore, preparation for a flight must adhere to strict aircraft and flight limits.

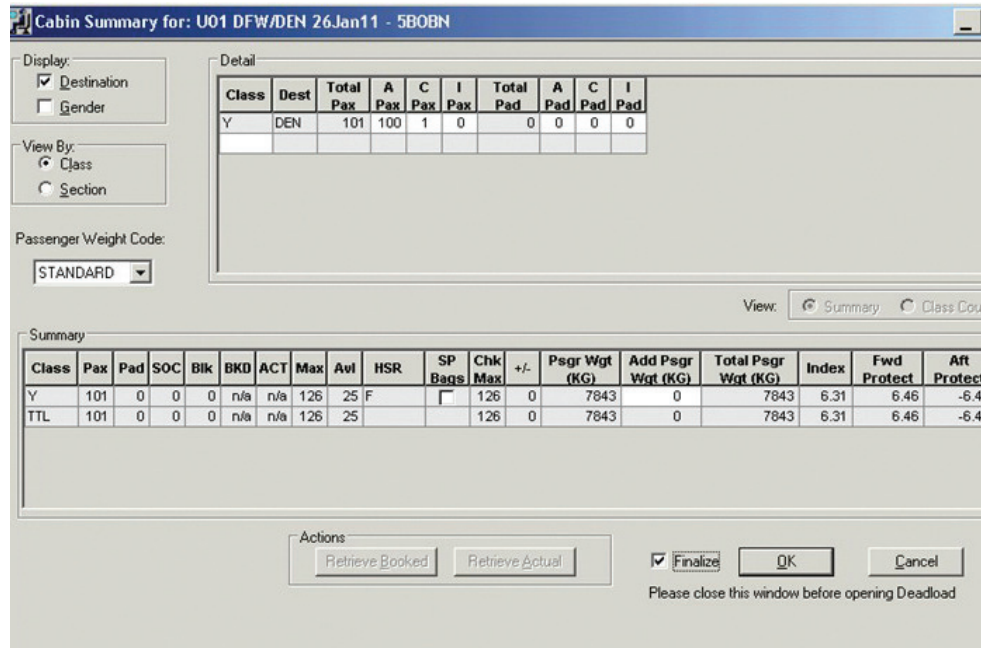
Aircraft must be loaded so structural limits are not exceeded. It must be loaded correctly so it maintains its balance from takeoff through landing and unloading. Consideration must be given to each component being added to aircraft. This includes the additional weight and distribution of fuel, cargo, bags and passengers.

Load planners use *Sabre® AirCentre™ Load Manager* to manage the loading of flights for an efficient, legal and on-time departure while maximizing flight revenue. Load controllers plan multiple flights within a short time frame to accommodate passengers, bags, cargo and required fuel.

In addition to planning flights, *Load Manager* can transmit a series of informative messages about passenger and cargo loading on aircraft to downline cities.

Load Manager provides a load plan that determines distribution of cargo and bags. It also accounts for passenger seating distribution by evaluating the balance effect based on assigned seating. It does the same for the distribution of fuel.

To accurately and efficiently plan the loading of an aircraft for a flight or series



Passenger Data The cabin summary screen includes passenger data used by a load planner to retrieve the number of passengers booked on a flight from the corresponding passenger check-in system.

of flights, *Load Manager* contains four basic software screens that a load planner completes to produce a flight load sheet. The load sheet is a printed document that captures necessary load information used by flight crews to set their takeoff, en route and landing weights. To produce the load sheet for crew, load planners accumulate various pieces of data and

populate the four basic screens of *Load Manager*.

Dry Operating Weight Screen

The dry operating weight screen enables load planners to adjust aircraft weight based on the number of flight crewmembers, catering supplies and any other factors that affect the dry operating weight and center of gravity index of the aircraft.

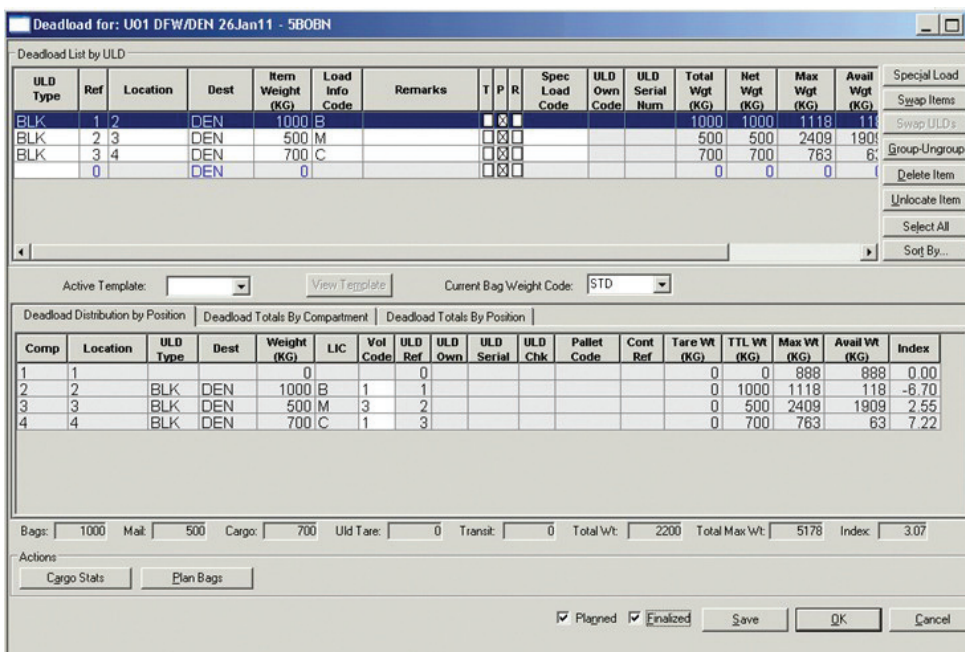
Cabin Summary Screen

The cabin summary screen contains passenger data for a flight. The load planner retrieves the number of passengers booked on the flight from the corresponding passenger check-in system. *Load Manager* can interface with the passenger check-in system to retrieve both booked and checked-in passengers.

This is dependent on the planning stage of the flight. The number of passengers and their seat assignment changes the flight's weight and balance. City pair or origin city determine passenger and bag weights. Non-listed city pairs default to a predetermined value. The benefits of having these options increase the accuracy of the calculations for each flight.

Deadload Screen

A critical aspect of weight and balance is the planning and placement of cargo and baggage. The deadload screen provides an automated tool to plan the aircraft bin locations for baggage, mail and cargo. Using this screen while planning the flight, the load planner can easily monitor shifts in the



Cargo And Baggage Placement The deadload screen contains a robotic tool to plan the aircraft bin locations for baggage, mail and cargo. While planning the flight, the screen enables a load planner to easily monitor shifts in the center of gravity as cargo or baggage are added to the load plan.

DOW for: U01 DFW/DEN 26Jan11 - 5BOBN

Dry Operating Weights		M		F		Weight KG	Index	Included
Basic Weight						39400	43.00	
Standard Cockpit Crew	2	2	0	0				<input checked="" type="checkbox"/>
Additional Cockpit Crew		0	0	0		0	0.00	
Standard Cabin Crew	C6	6	0	0				<input checked="" type="checkbox"/>
All Other Crew Members	0	0	0	0		0	0.00	
Crew Baggage								<input checked="" type="checkbox"/>
Pantry								<input checked="" type="checkbox"/>
Ballast Fuel						0	0.00	
Container								<input type="checkbox"/>
Pallets								<input type="checkbox"/>
DOW/DOI Adjustment						0	0.00	

Code	Description	Nbr	Std	Min	Max	Wt(KG)	Index

Dry Operating Weight: 39400 43.00

Optional Information

Captain's Name: SABRE

Finalize Crew Data

Default OK Cancel

delivery or transfer to another connecting flight.

Fuel savings achieved through proper load planning and adherence to the load plan is extremely important to an airline's operational costs. *Load Manager* provides an aft center of gravity, which reduces fuel consumption in flight.

Successful airlines carefully calculate passenger, cargo and fuel weights to attain the most effective load plans that reduce fuel burn en route. These airlines create optimal aircraft center of gravity balance to meet these goals as well as save fuel.

Load Manager improves weight calculations by allocating weight according to passenger type: adult male or female, child or infant. Unused weight allowance is reallocated for additional revenue passengers or cargo.

Load Manager is an integral component of the *Sabre® AirCentre™ Enterprise Operations* solution. It helps airlines manage change while reducing costs in fuel and labor.

The solution helps deliver your promise to your passengers, employees and stakeholders to provide the best day of operations. **F**

Adjusting Aircraft Weight Using the dry operating weight screen, load planners can adjust aircraft weight based on the number of flight crewmembers, catering supplies and any other factors that impact the dry operating weight and center of gravity index of the aircraft.

center of gravity as cargo or baggage are added to the load plan.

A key benefit of *Load Manager* is that it is configurable to interface with cargo and check-in systems, resulting in an efficient process and significant cost savings. The type of deadload screen depends on the aircraft type. Separate screens are designed for narrow- or wide-body aircraft and their corresponding container positioning.

Flight Plan Airport Analysis Screen

The flight plan airport analysis screen identifies the amount of fuel that is required for the flight based on the calculated flight plan. *Load Manager* is integrated with *Sabre® AirCentre™ Flight*

Plan Manager to provide an automated population of fuel information.

Once these four screens are completed, the load planner produces the load sheet for flight crews to determine takeoff speed, flap setting and other important aspects of takeoff and landing.

The primary importance of exact load planning for an airline is legality and efficiency. Efficient loading and unloading of cargo and bags is extremely important to an airline's ground operations and good passenger service.

Load Manager optimizing algorithms prioritize baggage and cargo locations on the aircraft. The correct placement of cargo and baggage on the aircraft can expedite unloading for quicker baggage

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