

Getting the 787
Service Ready

**Improving
Runway Safety**

Open Fuel Tank
Flammability
Zones

New Service
Option for the 787

AERO

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787 Service Ready

787 Dreamliners will come with a full set of support services to help operators make a smooth transition to this new airplane.

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Improving Runway Safety with Flight Deck Enhancements

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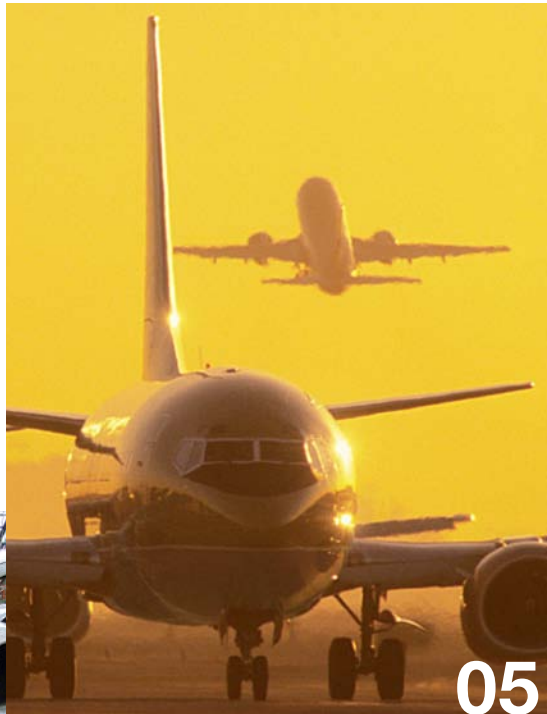
Flammability Zones Around an Airplane with Open Fuel Tanks

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New 787 Service Option Will Help Airlines Optimize Operations

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The Boeing Company supports operators during the life of each Boeing commercial airplane. Support includes stationing Field Service representatives in more than 60 countries, furnishing spare parts and engineering support, training flight crews and maintenance personnel, and providing operations and maintenance publications.

Boeing continually communicates with operators through such vehicles as technical meetings, service letters, and service bulletins. This assists operators in addressing regulatory requirements and Air Transport Association specifications.

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787 Service Ready

When the first 787 Dreamliners are delivered to customers, they will come with a full set of support services designed to help operators make a smooth transition to this new airplane.



Our goal is to ensure that the support and the airline are ready when the airplane is ready. This includes:

- **People (training).** We're here to help the operator's people become knowledgeable and proficient at operating and maintaining the airplane and utilizing the supporting infrastructure, such as technical data, tooling, and other services.
- **Information (flight and maintenance data).** This translates into complete, accurate, and synchronized data that

is readily available and accessible when and where it is needed by the people who need it.

- **Tools (ground support equipment and information technology systems).** We offer a complete set of functional tools and systems that facilitate expedient and efficient completion of all operational and maintenance activities, including the electronic flight bag, e-enabling software, and Maintenance Performance Toolbox.
- **Parts (material provisioning).** We are committed to ensuring inventory is readily available and can be deployed and installed on an airplane in a timeframe that precludes operational disruptions. To this end, we have developed a rotatable exchange services program to support the operation of the 787. This program will help airline customers reduce inventory costs by providing access to a Boeing-managed inventory pool of parts that is available to ship within 24 hours of request.

For operators that are looking for even greater assistance in introducing the Dreamliner, GoldCare — our new lifecycle solution to support the 787 — provides maintenance, engineering, and material management as a multiyear service managed by Boeing. You'll find details about GoldCare on page 21 of this magazine.

At Boeing, we've been working hard with our OEM suppliers and partners to make sure that airlines taking delivery of the new 787 have everything they need for a smooth introduction of the Dreamliner. We have a great team of people who will be ready to support the airplanes when they enter service. The airplane, the airline, and the support will all be ready on the first day of service.

MIKE FLEMING

Director of 787 Services and Support,
Boeing Commercial Aviation Services



Boeing's goal is gate-to-gate enhanced crew awareness that promotes safety and efficiency.

Improving Runway Safety with Flight Deck Enhancements

Flight deck design improvements can reduce the risk of runway incursion, confusion, and excursion, resulting in safer and more efficient taxi, takeoff, approach, and landing operations.

By **Sam Clark**, Flight Deck Research Engineer, and
George Trampus, Flight Deck Crew Operations Integration Engineer

Runway safety enhancements range from enhanced airport signage and markings, to improved procedures and training, and new flight deck displays, controls, and alerting. This article discusses Boeing's runway safety strategy and the flight deck design solutions being researched and developed to provide crew information and awareness that promote runway safety and operational efficiency.

A COLLECTIVE EFFORT AND A SHARED RESPONSIBILITY

Airports, air traffic control (ATC), regulators, airplane and avionics manufacturers, and airplane operators each have unique responsibilities and challenges to ensure the safest possible airport environment. Airports must focus on visible, understandable signage and well-defined and well-maintained surfaces. ATC must provide safe and efficient airplane control and separation procedures and services. Regulators must facilitate improvements with guidance and oversight. Airplane and avionics manufacturers must offer cost-

effective flight deck solutions that provide useful operational information and awareness. Airlines must establish effective policies, practices, and procedures and balance fleet risk and enhancement costs and benefits.

BOEING SUPPORT OF RUNWAY SAFETY EFFORTS

Boeing is working with the commercial aviation industry to develop a runway safety approach based on a data-driven consensus of root causes, risk factors, and interventions. Integration with existing and

Runway safety areas

Runway safety is part of airport operations, which comprises taxi, takeoff, and approach and landing operations in the area from ground to about 2,500 feet within five nautical miles of the airport. Boeing is developing flight deck design solutions in each of three runway safety areas:

Runway Incursion The incorrect presence of an airplane, vehicle, or person on the protected area of a surface designated for the landing and takeoff of airplanes.

Runway Confusion An actual or attempted takeoff or landing on the wrong runway or on a taxiway.

Runway Excursion An airplane overruns a runway end or veers off a runway side during takeoff or landing.

New technologies improve runway safety

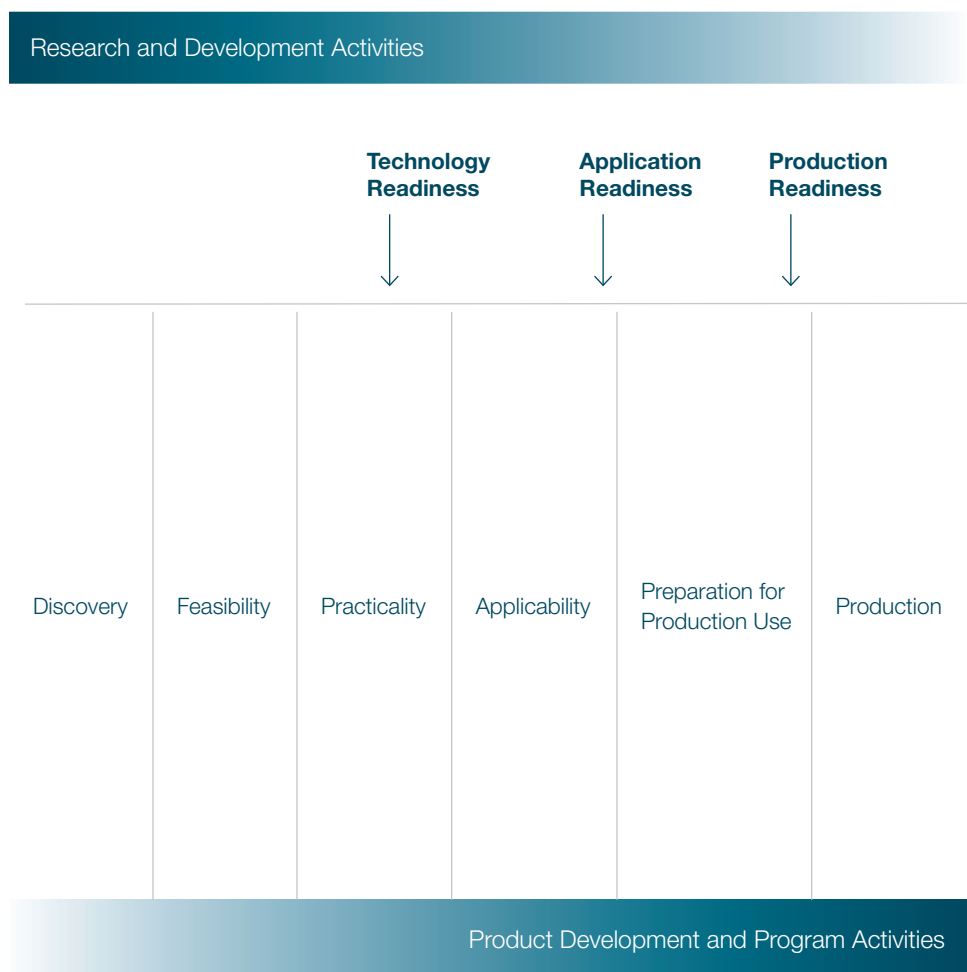
A Commercial Aviation Safety Team assessment of runway incursions evaluated multiple ways to improve situational awareness, including two key technologies: airport moving map (AMM) with ownship (own airplane) position and a runway awareness and advisory system (RAAS).

AMMs depict runways, taxiways, and other airport features. Global positioning system technology is used to display airplane (ownship) position on the map.

RAAS is a software option in the enhanced ground proximity warning system (EGPWS). The EGPWS is standard equipment on all current Boeing models. RAAS provides voice callouts for pilot awareness when approaching, entering, or on a runway, and voice and visual alerts for taxiway takeoffs and short runways.

Figure 1: Flight deck enhancement development

Boeing's development process for flight deck enhancements, including those related to runway safety, is characterized by end-to-end collaboration, coordination, and communication among research and development, product development, and program implementation teams.



planned NextGen air traffic management strategies is a key consideration. Boeing actively supports government and industry runway safety efforts and is working with organizations such as the U.S. Federal Aviation Administration, the Radio Technical Commission for Aeronautics (RTCA), the International Civil Aviation Organization, the Commercial Aviation Safety Team, and the Flight Safety Foundation to develop industry guidelines, standards, and solutions. Boeing also funds research and product development and collaborates with customers and vendors to provide flight deck solutions for both current and future airplanes.

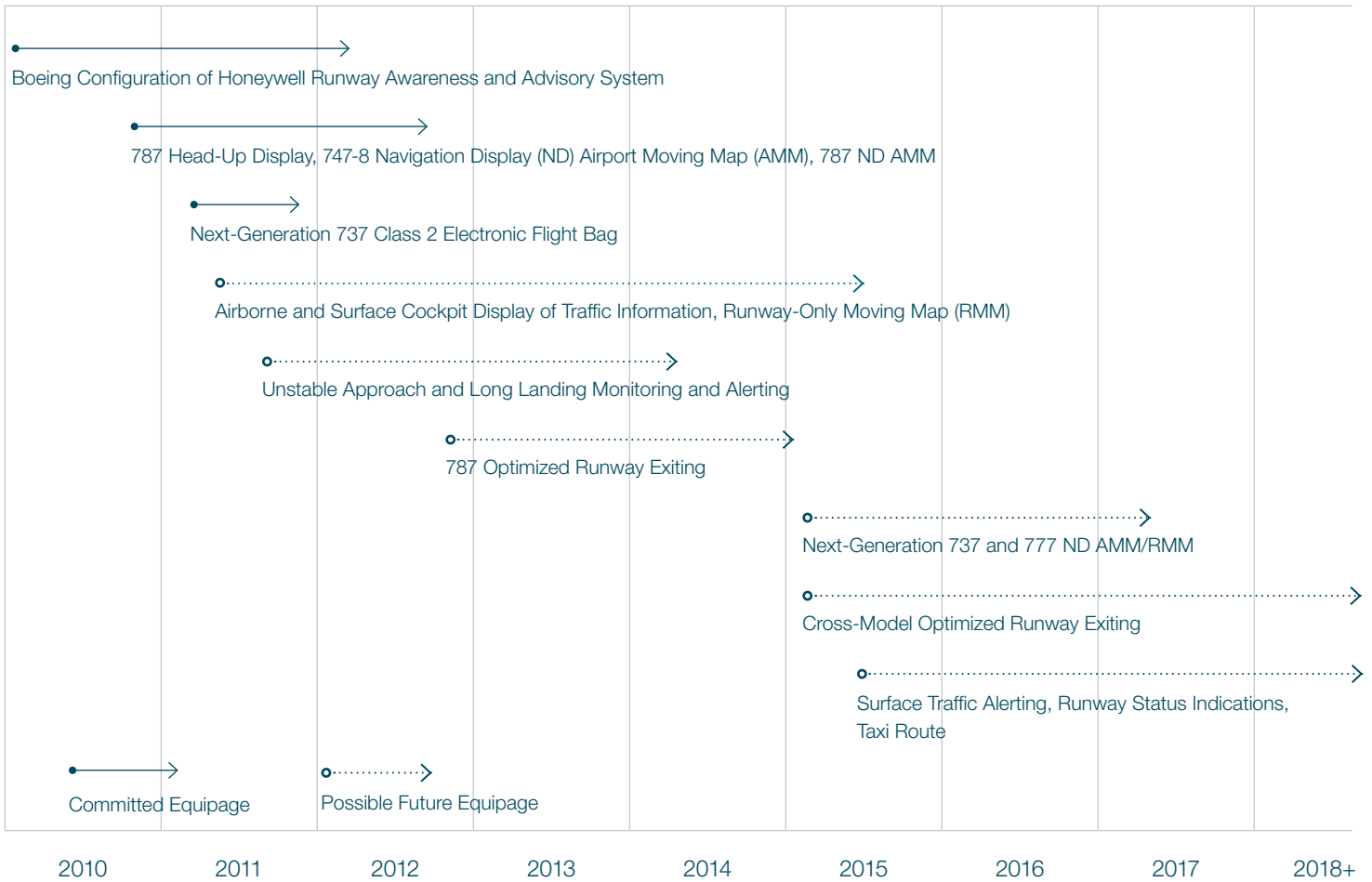
Boeing supports the RTCA Special Committee for Automatic Dependent Surveillance Broadcast (ADS-B), SC-186. (For more information about ADS-B, see *AERO* second-quarter 2010.)

BOEING RUNWAY SAFETY STRATEGY

To reduce runway incursion and confusion events, Boeing's near-term flight deck design strategy is to improve flight crew awareness of location during taxi, takeoff, approach, and landing. The longer-term Boeing strategy is to improve crew awareness of taxi route, airport traffic, runway status, and runway traffic conflicts.

Figure 2: Implementation timelines: committed and possible future enhancements

Boeing is currently pursuing a number of flight deck design enhancements for possible implementation.



The goal of these efforts is an on-ground awareness of position, route, and traffic comparable to that provided in-flight today.

To reduce runway excursion events, Boeing's flight deck design strategy is to improve flight crew awareness of predicted and actual takeoff, approach, and landing performance. This takes the form of providing vertical guidance to all runways, and improved performance calculations, displays, and alerting.

Boeing's runway safety strategy is driven by industry consensus on root causes and interventions. Solutions are designed to provide flight crews with information and awareness to prevent runway incursion, confusion, and excursion.

BOEING FLIGHT DECK ENHANCEMENT DEVELOPMENT PROCESS

Once specific safety areas, causal factors, and issues have been determined, Boeing research and product development teams identify possible flight deck design enhancements and assess them for feasibility, practicality, and effectiveness. These teams then assess the technology, application, and production readiness of the flight deck design enhancements. Research, product development, and program collaboration, coordination, and communication are critical to success of the development process (see fig. 1).

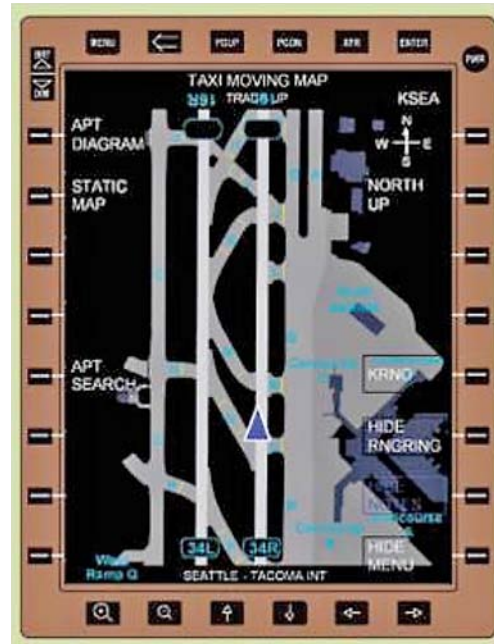
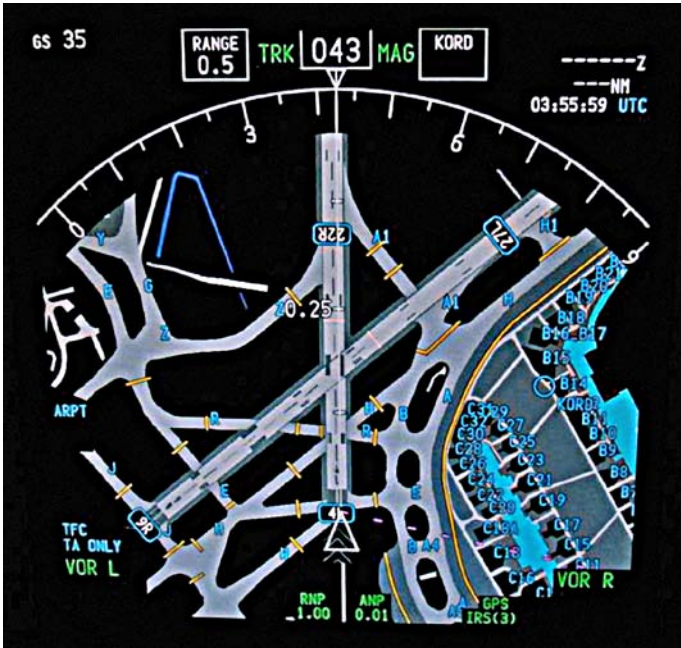
The process includes vendor, regulator, and customer involvement.

BOEING FLIGHT DECK DESIGN ENHANCEMENTS

Boeing focuses on a human factors-driven design that is consistent with existing and planned airport, air traffic, and customer operating strategies. With its current and future efforts, Boeing aims to develop cost-effective new design solutions that integrate with existing flight deck displays, controls, and alerting, and maintain consistency and compatibility with existing flight deck design and operational philosophies (see fig. 2).

Figure 3: Airport moving map (AMM)

An AMM is shown on the 787 navigation display (left) and on the electronic flight bag side display (right).



Specific flight deck enhancements address runway incursion, confusion, and excursion. Airport moving map (AMM) with ownship (i.e., own airplane) position display is a foundation for many of these enhancements.

RUNWAY INCURSION AND CONFUSION

Forward display of AMM with ownship position is provided on 787 and 747-8 navigation display and is planned on all new Boeing airplanes. An electronic flight bag side display of AMM is available on the Next-Generation 737, 747-400, 757, 767, and 777 (see fig. 3).

The Honeywell runway awareness and advisory system (RAAS) is available in production on the Next-Generation 737 and 777 and will be available on the 747-8 (see fig. 4). RAAS retrofit is offered on the Next-Generation 737 and 777. Retrofit is

under consideration for the 717, 737-300/-400/-500, 747-400, 757, 767, MD-80/-90, and MD-10/-11 pending customer interest.

Future incursion/confusion-related enhancements under consideration include AMMs and runway-only moving maps (RMMs) with the display of taxi route, ADS-B air and ground traffic, runway status indications of occupancy and in-use, and traffic alerting. These may be implemented separately or in combination.

Taxi route may be manually entered, stored and recalled, or datalinked (see fig. 5). Datalink provides the greatest efficiency and safety benefit. Boeing is currently engaged in research and development of industry taxi route datalink standards.

ADS-B enables ground traffic display (see fig. 6a). But the reduced airplane, runway, and taxiway separations involved in ground airport operations require very accurate position reporting and display of traffic.

Traffic and traffic data filtering are required to ensure usable displays. Awareness of runway traffic that is beyond the selected display range (or off-scale) is important — especially during taxi where typical display range is low (see fig. 6b).

Runway status indications of runway occupancy and runway usage by takeoff or landing traffic enhance pilot awareness at a glance and thereby reduce pilot workload (see figs. 7a and 7b). These indications provide pilot awareness of possible traffic conflicts and reduce the need for alerting.

ADS-B traffic conflict alerting has significant potential safety benefit, particularly during takeoff and approach/landing. Off-scale traffic display and alerting also have high value (see fig. 8).

Boeing is supporting the development of industry standards for airport traffic display, indications, and alerting.

Figure 6a: AMM + airport traffic

A Boeing research prototype of ADS-B airport traffic displayed on an AMM.



Figure 6b: AMM + off-scale traffic indication

A Boeing research prototype of off-scale traffic indication (in green) for airborne traffic on 22R approach displayed on an AMM. The display shows traffic identification, ground speed, and distance from ownship.



Figure 7a: AMM + runway status indications

A Boeing research prototype of traffic-related indications of runway occupancy displayed on an AMM.



Figure 7b: AMM + runway status indications

A Boeing research prototype of traffic-related indications of runway in-use (for takeoff or approach/landing) displayed on an AMM.



Figure 8: AMM + traffic alerting

A Boeing research prototype to alert for on-scale traffic conflict (left) and off-scale traffic conflict (right) displayed on an AMM. A voice alert accompanies the display graphics.

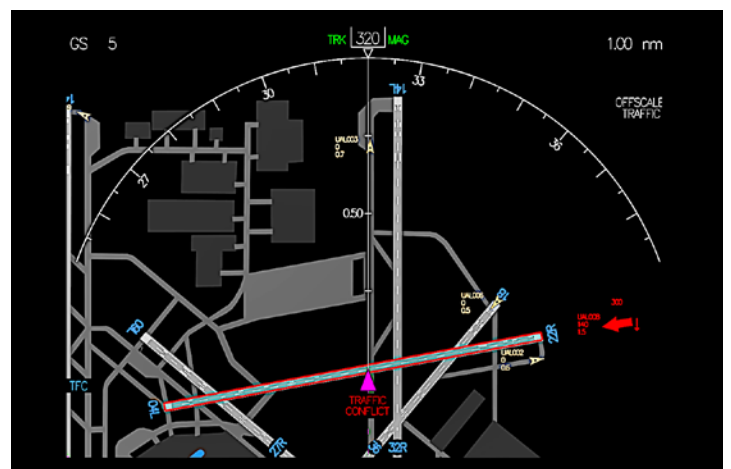
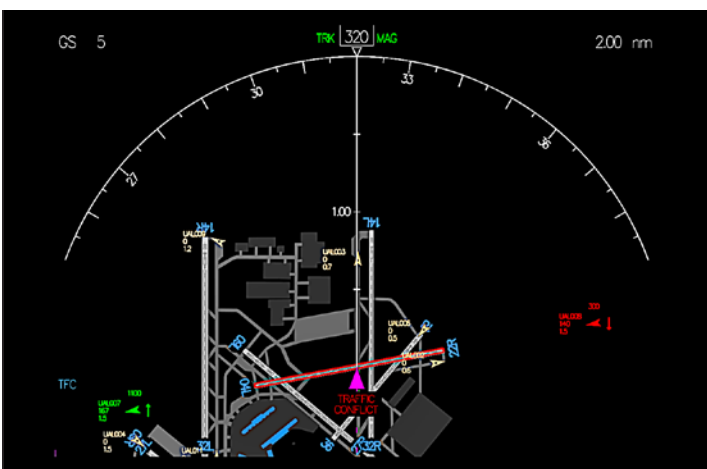
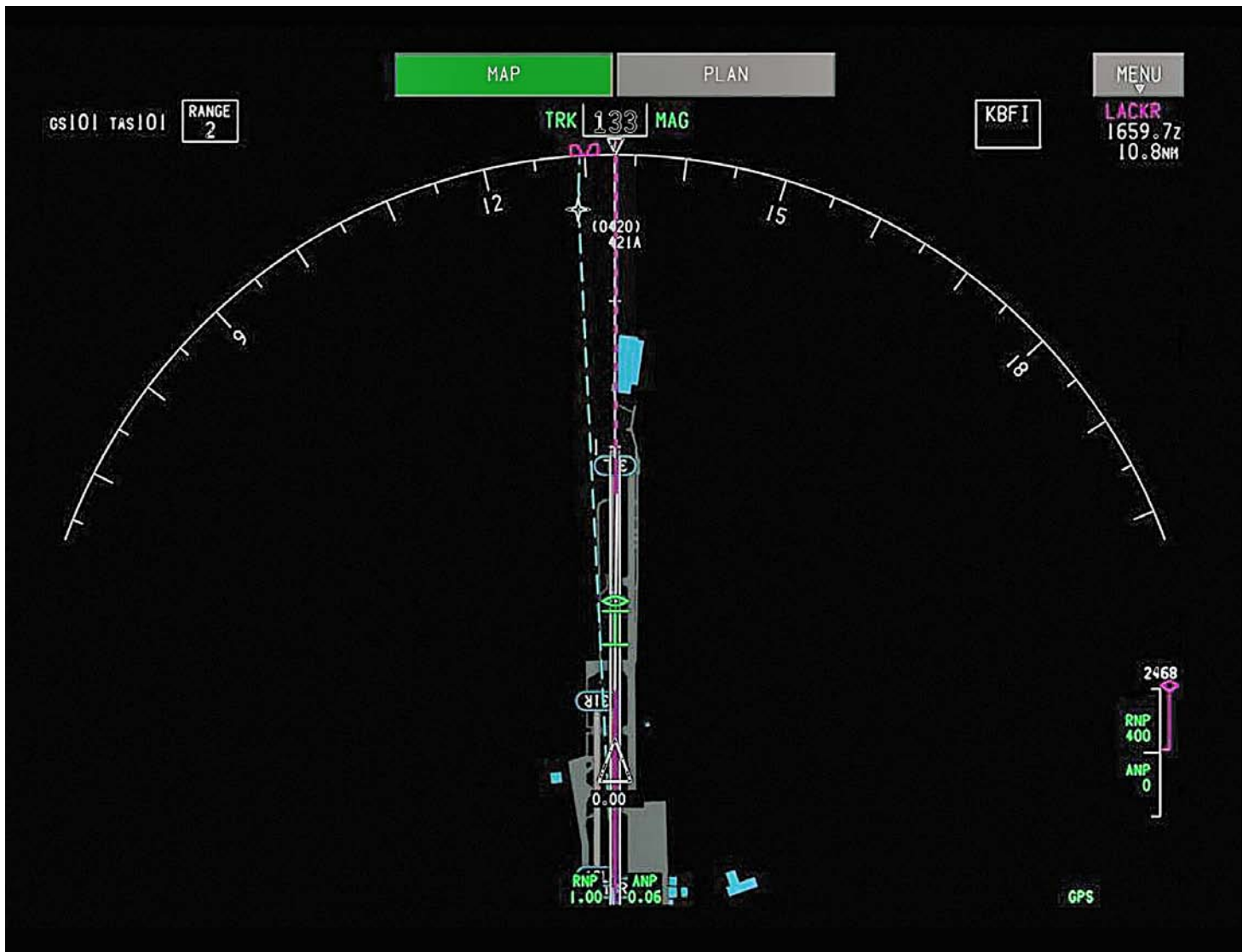


Figure 9: Optimized runway exiting

Predicted (green bars) and actual (green oval) stopping performance displayed on an AMM.



RUNWAY EXCURSION


Existing Boeing flight deck enhancements include a runway disagree alert to guard against wrong runway takeoff; integrated approach navigation, vertical situation display, and head-up display (HUD) enhancements to promote approach stability; speed brake alerting to help ensure proper configuration for deceleration after landing; and RAAS callouts (e.g., runway distance remaining) and alerts (e.g., short runway) to provide awareness of overrun risk. HUD is available for the Next-Generation 737 and is standard on the 787.

Future excursion enhancements under consideration include:

- Landing performance calculation and display.
- HUD cues on primary flight displays.
- Stabilized approach, landing, and braking performance displays.
- Unstable approach (e.g., too high or too fast), long landing, predicted overrun, and taxiway landing alerts.
- Optimized runway exiting for a graphical indication of estimated braking performance and a dynamic indication of stopping performance during landing (see fig. 9).

SUMMARY

Boeing has implemented AMM and other flight deck enhancements and is developing future flight deck enhancements to promote runway safety during taxi, takeoff, and approach and landing operations. Boeing's goal is gate-to-gate enhanced crew awareness of airplane position and performance, route, ground traffic, and other information that promotes runway safety and operational efficiencies.

For more information, please contact Sam Clark at samuel.t.clark@boeing.com or George Trampus at george.trampus@boeing.com. 



A new service letter on open fuel-tank flammability gives operators more maintenance flexibility.

Flammability Zones Around an Airplane with Open Fuel Tanks

By **Michael D. Jones**, Service Engineer

Boeing recently released a service letter to help operators and maintenance, repair, and overhaul (MRO) organizations determine when an airplane with open fuel tanks can be considered fire safe.

Boeing aircraft maintenance manuals (AMMs) provide specific procedures for opening and purging fuel tanks on Boeing airplanes. During the purging process, the areas around an airplane are defined as Class I, Division 1 or Division 2 flammability zones. Only explosion-proof equipment can be used within these flammability zones, which extend to a 50-foot radius around the airplane. The definitions for Class I, Division 1 and Division 2 flammability zones (per National Fire Protection Association 70, Article 500) are as follows:

- Class I, Division 1 hazardous locations:
 - Locations where ignitable concentrations of flammable gases or vapors can exist under standard operating conditions.
 - Locations where ignitable concentrations of flammable gases or vapors may exist frequently because of repair or maintenance operations.
 - Locations where ignitable concentrations of flammable gases or vapors can exist because of leakage.
 - Locations or processes that can release ignitable concentrations of flammable gases or vapor, and can also cause failure of electrical equipment at the same time.
- Class I, Division 2 hazardous locations (or equivalent standard): Locations where flammable liquids or gases are handled, processed, or used, but where the liquid, vapors, or gases will usually be in closed containers or closed systems. The containers or systems will not allow the release of liquid, gas, or vapor in sufficient quantity to produce an ignitable fuel and air mixture unless the container or system fails or is damaged.

Figure 1: Service letter numbers by airplane model

MODEL	SERVICE LETTER	MODEL	SERVICE LETTER
707	707-SL-28-020-B	787	787-SL-28-001-B
717	717-SL-28-120-B	DC-8	DC-8-SL-28-111-B
727	727-SL-28-042-B	DC-9	DC-9-SL-28-111-B
737	737-SL-28-082-B	DC-10	DC-10-SL-28-120-B
747	747-SL-28-107-B	MD-10	MD-10-SL-28-117-B
757	757-SL-28-046-B	MD-11	MD-11-SL-28-128-B
767	767-SL-28-044-B	MD-80	MD-80-SL-28-113-B
777	777-SL-28-027-B	MD-90	MD-90-SL-28-114-B

The AMM provides the procedure and the associated warnings and cautions for purging fuel tanks. The AMM does not define when the purging procedure can be considered complete or when areas around the fuel tank can be considered fire safe. This article provides information regarding the flammability of open fuel tanks and airplane maintenance activities around these open tanks.

In June 2010, Boeing released a multi-model service letter that defines when the purging process is complete and when the areas around an airplane can be considered fire safe. Airlines and MROs can use this service letter to develop or revise their own requirements and policies regarding the flammability zones around airplanes. The service letter only addresses the flammability of the areas around an airplane — it does not address maintenance within the fuel tank. Personnel must continue to obey the warnings and cautions in the AMM fuel tank entry procedures.

CLARIFYING MAINTENANCE PROCEDURES NEAR OPEN FUEL TANKS

In response to operator requests, Boeing has released a service letter to further define the flammability of airplane fuel tanks (see fig. 1). The service letter, released in 2010, provides guidance on the flammability of the areas around an airplane, for open and closed fuel tanks, and for hangar and ramp operations.

By defining when the areas around an airplane are flammable and when these areas can be considered fire safe, this new service letter gives airlines and MROs additional flexibility in their maintenance operations.

The content of the service letter is based on the following National Fire Protection Association (NFPA) documents, which provide the fire protection standards for design and maintenance practices in the United States:

- NFPA 70, Article 500 (Hazardous Locations).

- NFPA 70, Article 515 (Electrical — Airplane Hangars).
- NFPA 407 (Airplane Fuel Servicing).
- NFPA 409 (Airplane Hangars).
- NFPA 410 (Airplane Maintenance).

FIRE SAFE CONDITIONS

The areas around airplane fuel tanks are considered flammable until all the fuel in an airplane is removed (i.e., all tanks are pressure defueled, residual fuel is removed from the sump drains, and any trapped fuel is manually removed), and the tanks are fully purged. When the tanks are defueled, sumped, and mopped, the airplane can be considered unfueled (NFPA 410, 3.3.28). Purging is considered complete when the measured lower explosive limit (LEL) is confirmed to be 10 percent or less. Prior to the airplane being unfueled and purged, maintenance personnel must maintain the Class I, Division 1 and Division 2 hazardous locations around the airplane (see fig. 2 on page 16). If the airplane has one tank

Airlines and MROs must also consider potential requirements from insurance carriers, local governments, and other entities when developing their own policies.

defueled and one or more tanks fueled, the airplane is considered fueled and the Class I, Division 1 and Division 2 flammability zones must be maintained.

After the fuel is removed from all of the fuel tanks using these methods (i.e., the airplane is unfueled), and the tanks are purged (i.e., LEL is confirmed to be less than 10 percent), then the areas around the airplane can be considered fire safe. At this point, normal airplane maintenance can be performed without the Class I, Division 1 and Division 2 restrictions (see fig. 3 on page 17). Maintenance personnel must check the LEL inside the fuel tanks and around the airplane at floor level periodically. Any maintenance pits or tunnels must also be checked for flammable vapors. Even after the areas around the airplane are fire safe, Boeing recommends that the tanks continue to be ventilated while the fuel tanks are open.

Airlines and MROs must also consider potential requirements from insurance carriers, local governments, and other entities when developing their own policies.

MAINTENANCE ACTIVITIES WITH CLOSED FUEL TANKS

In general, airplanes with closed fuel tanks are subject to fewer restrictions both in a hangar and on the ramp.

In the hangar. There are no Boeing restrictions to applying electrical power to an airplane with closed fuel tanks. However, maintenance personnel must maintain the Class I, Division 1 and Division 2 hazardous locations around the airplane fuel tanks and along the hangar floor (see fig. 4 on page 18). Fuel vapors can escape from the airplane surge tanks. All potential ignition sources from maintenance activities and associated tooling must be outside of the Class I, Division 2 hazardous locations, unless the tooling is approved for use in a hazardous location. For example, the tooling must be certified as explosion proof.

On the ramp. There are no flammability-zone restrictions associated with ramp maintenance activities and closed fuel tanks. However, maintenance personnel must be aware that fuel vapors can escape from the airplane surge tanks, especially on a hot day

and during fueling. Fuel can spill from the surge tank vents during fueling operations if the tanks are overfilled. Maintenance personnel should not use any tooling or equipment that can create an ignition source under the surge tank vent scoop or near the fueling panel (see fig. 5 on page 19).

SUMMARY

Operators must continue to follow all the applicable warnings and cautions published in the AMM for purging the fuel tanks and for fuel tank entry. These warnings and cautions are to prevent ignition sources in the flammable vapor zones. When all the fuel is removed from an airplane's fuel tanks, the tanks are purged, and LEL is below 10 percent, the areas around the airplane can be considered fire safe.

The service letter released in 2010 helps define when airplane fuel tanks are flammable, which can allow greater flexibility for airline and MRO operations.


For more information, please contact Michael D. Jones at michael.d.jones@boeing.com. 

Figure 2: Hazardous locations: open fuel tanks — before the airplane is purged and unfueled

Only explosion-proof equipment can be used within these flammability zones, which extend to a 50-foot (15-meter) radius around the airplane.

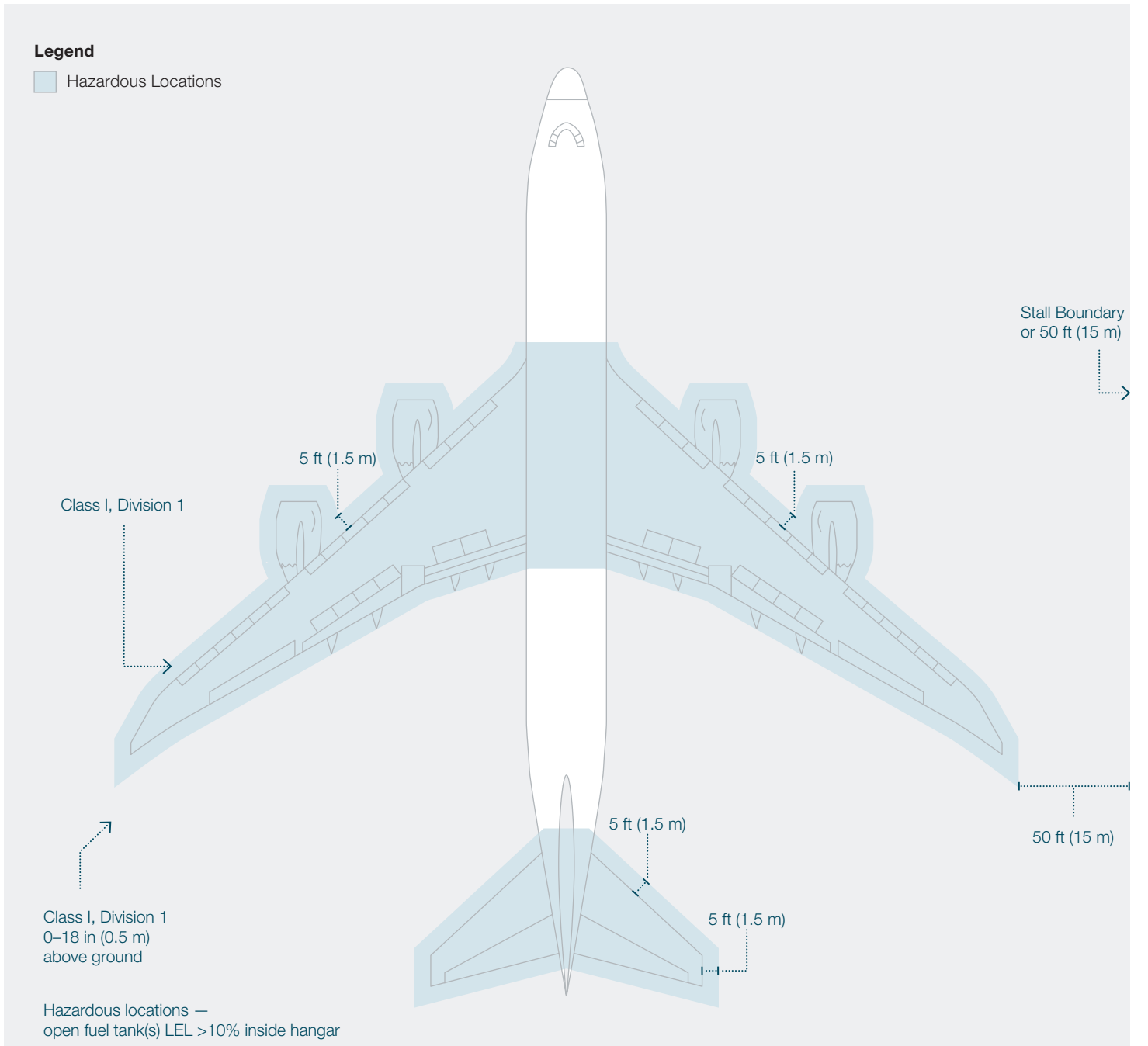
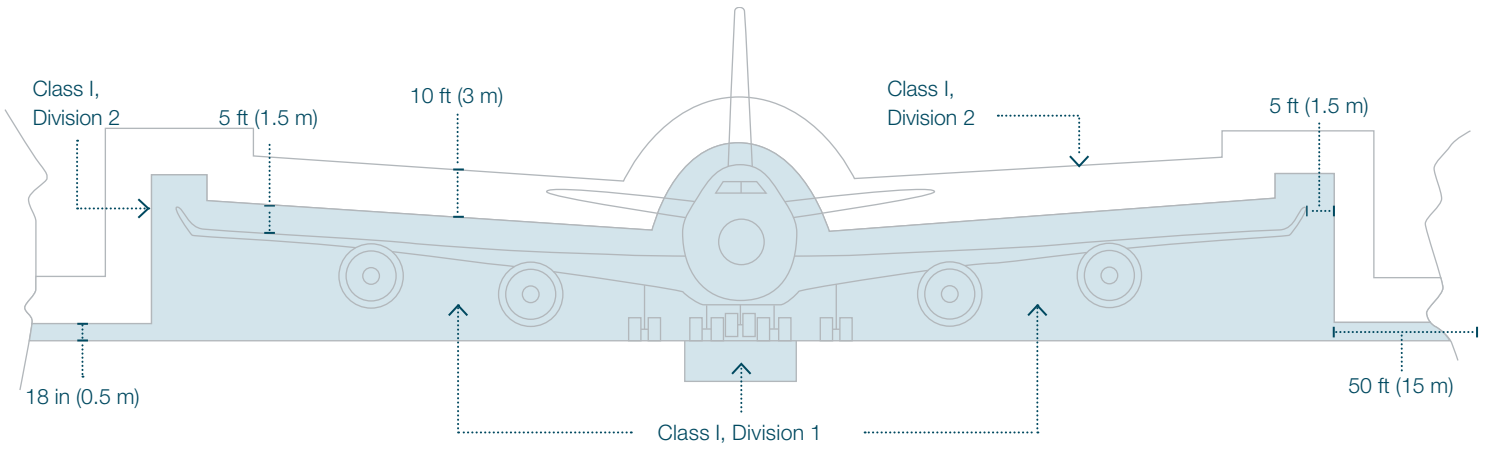
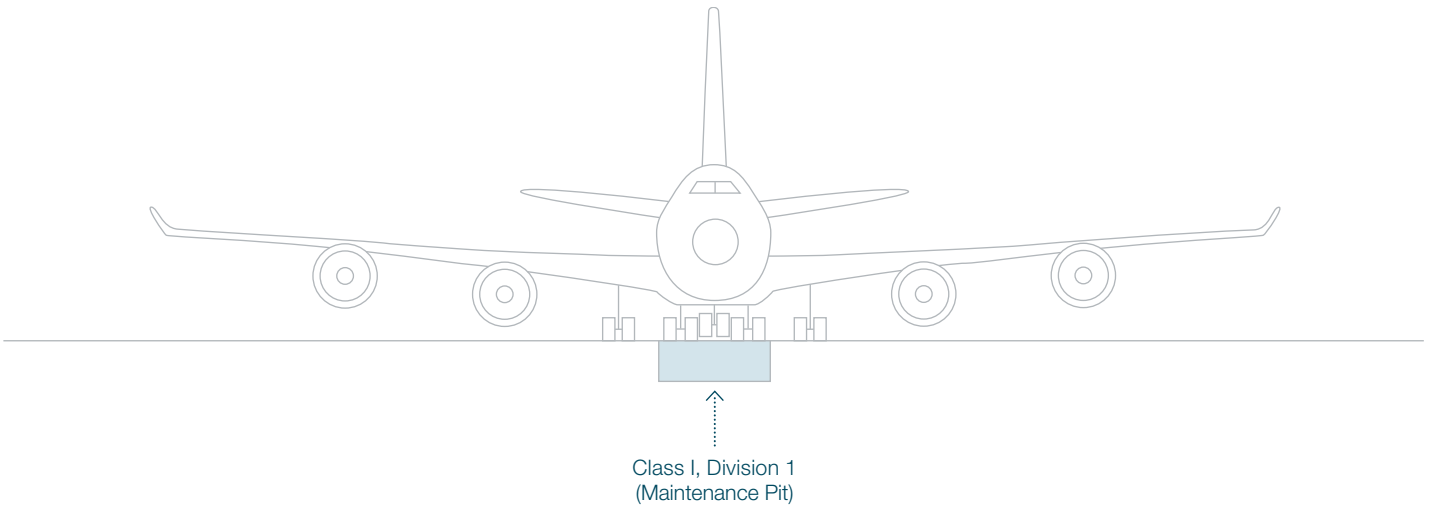


Figure 3: Hazardous locations: open fuel tanks — after the airplane is purged and unfueled

After all of the fuel is removed from all of the fuel tanks and the tanks are purged, the airplane can be considered in fire safe condition.



Legend

 Hazardous Locations



Figure 4: An airplane with closed fuel tanks inside a hangar

When a fueled airplane with closed fuel tanks is in a hangar, Class I, Division 1 and Division 2 hazardous locations must be maintained around airplane fuel tanks and along the hangar floor.

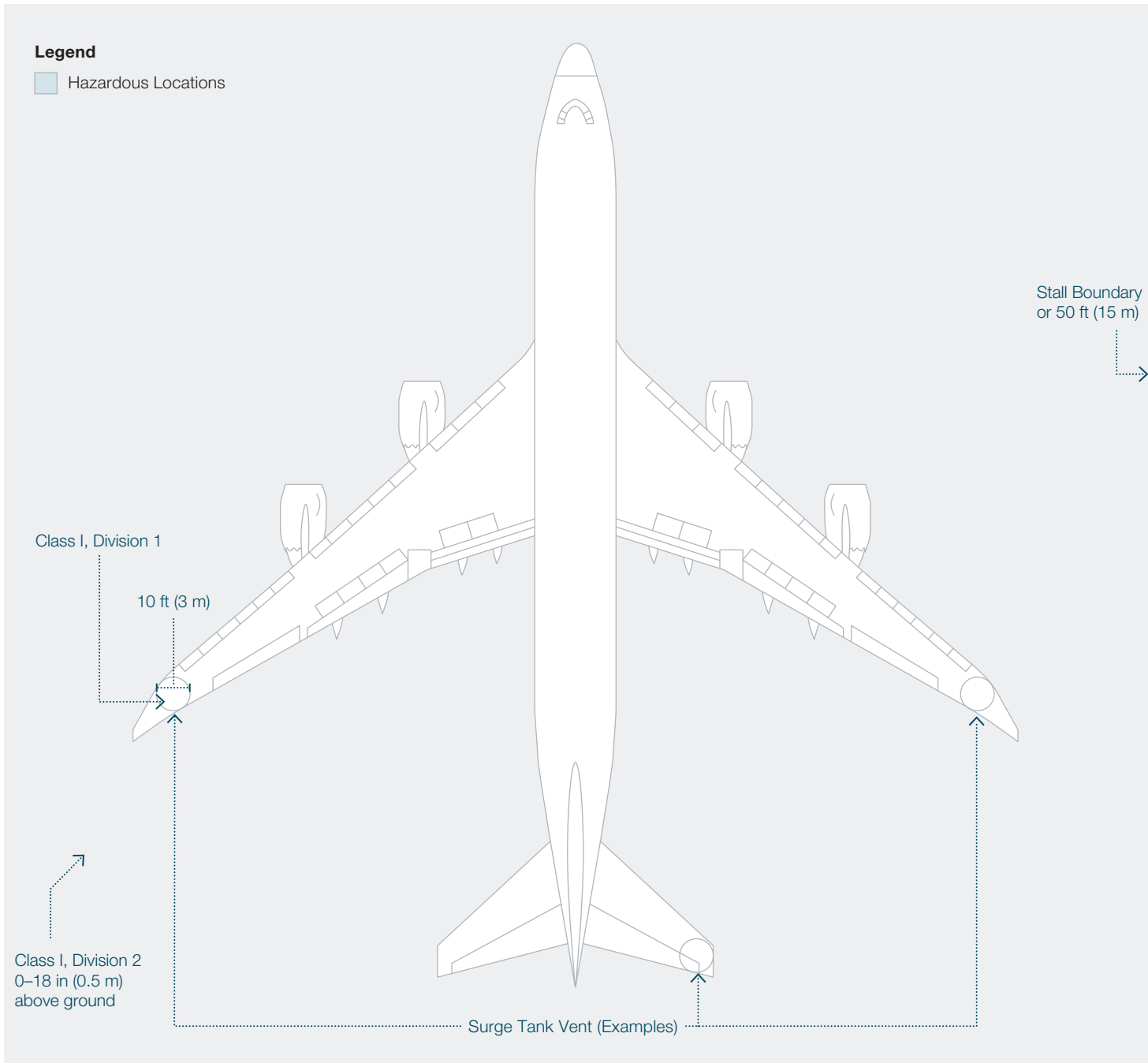
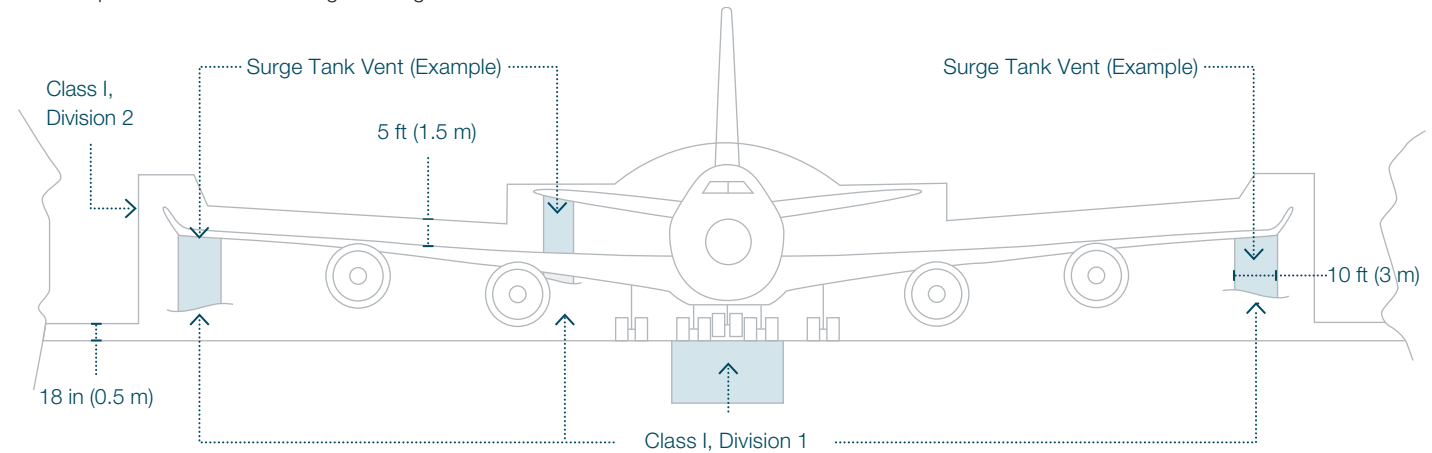
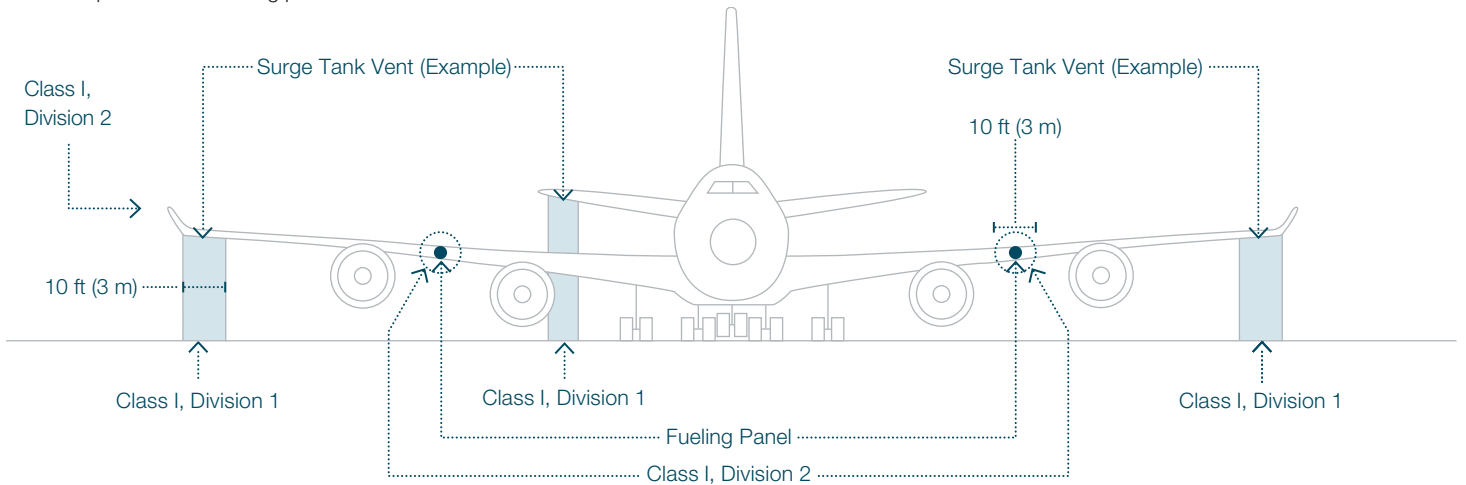


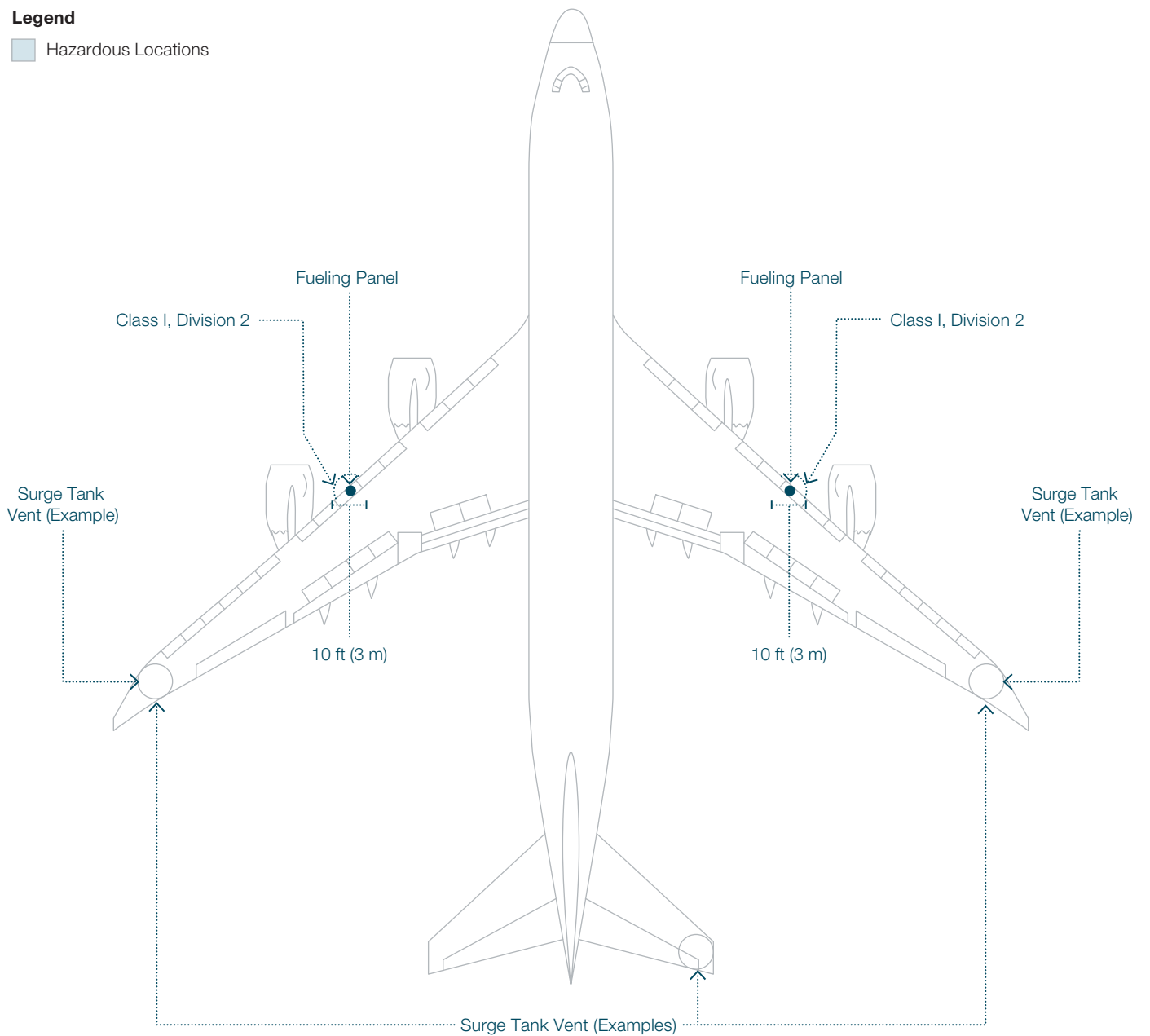
Figure 5: An airplane with closed fuel tanks on a ramp

Although there are no flammability zone restrictions associated with closed fuel tanks, ramp activities ignition sources should not be used under the surge tank vent scoop or near the fueling panel.



Legend

■ Hazardous Locations





By monitoring the airplane in real time, GoldCare can proactively anticipate problems and help maximize airplane availability.

New 787 Service Option Will Help Airlines Optimize Operations

By Jay Maloney, Vice President, Fleet Management

Keeping airplanes in the air and generating revenue requires a reliable airplane backed by robust technical support that ensures parts and services are ready and available when and where the airline operator needs them. GoldCare, a new service from Boeing, will help airlines improve operational efficiency by ensuring that parts and services are deployed globally when needed.

When operators begin flying the 787 Dreamliner, they will also have a flexible new set of support services available to them. GoldCare, developed by Boeing specifically for the 787, is designed to provide airlines with technical support to help them maximize operations in a way that leverages the 787's new systems and e-enabled capabilities.

This article describes the range of GoldCare services and how they can help airlines optimize 787 operations.

A NEW WAY OF PROVIDING SUPPORT SERVICES

GoldCare is a flexible set of 787 support services developed by Boeing that addresses several operational efficiency needs of an airline and can be tailored to specific customer requirements. These services enable operators to outsource some or all of their engineering and maintenance operational needs.

Under the program, Boeing integrates a network of world-class maintenance, repair, and overhaul (MRO) organizations and suppliers that deliver maintenance

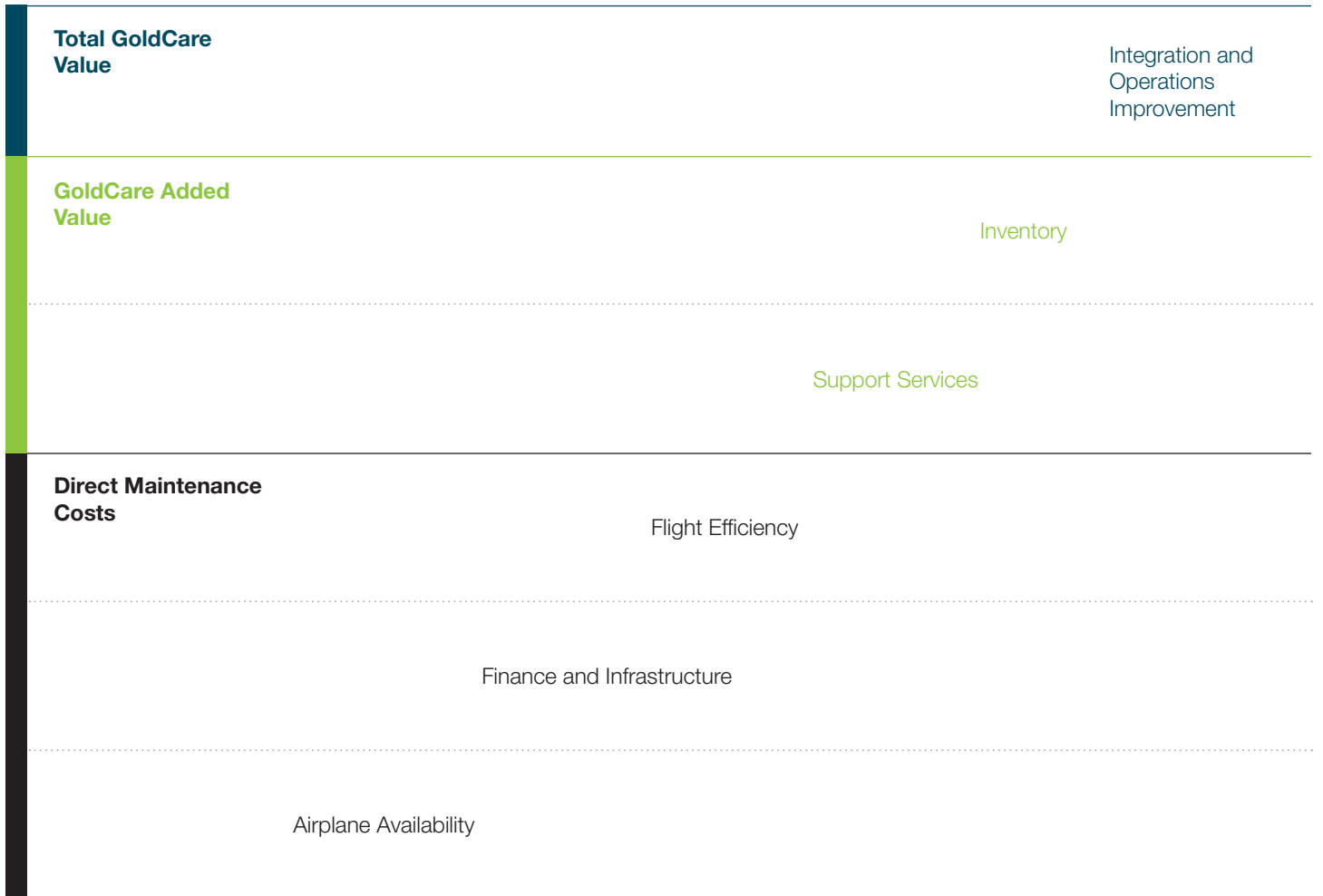
services and material management to a participating airline's in-service 787 fleet.

Boeing integrates these services with engineering, planning, and supply chain logistics services at a predictable and competitive cost. In addition to the Boeing Commercial Airplanes Operations Center, GoldCare also provides a 24x7 support center using advanced technologies that turn airplane operating data into diagnostic information to enhance efficiency and maximize airplane availability.

Boeing employs a global approach to managing the maintenance program, based on the company's information technology infrastructure, scale, and

Figure 1: GoldCare adds value throughout an airplane's lifecycle

GoldCare is designed to add value by allowing operators to reduce or eliminate their maintenance and engineering activities and focus on airline operations.



experience with fleetwide real-time data and e-enabled tools. This combination allows Boeing to offer a fleet management service that takes full advantage of the data richness of the 787.

Airlines using GoldCare services can simplify airplane ownership, boost airplane availability, reduce cost, minimize risk, and improve efficiency throughout the lifecycle of the airplane (see fig. 1). In addition, appraisers and financiers believe that maintaining the 787 within GoldCare can enhance the value of the airplane across the lifecycle.

A RANGE OF SERVICE OPTIONS

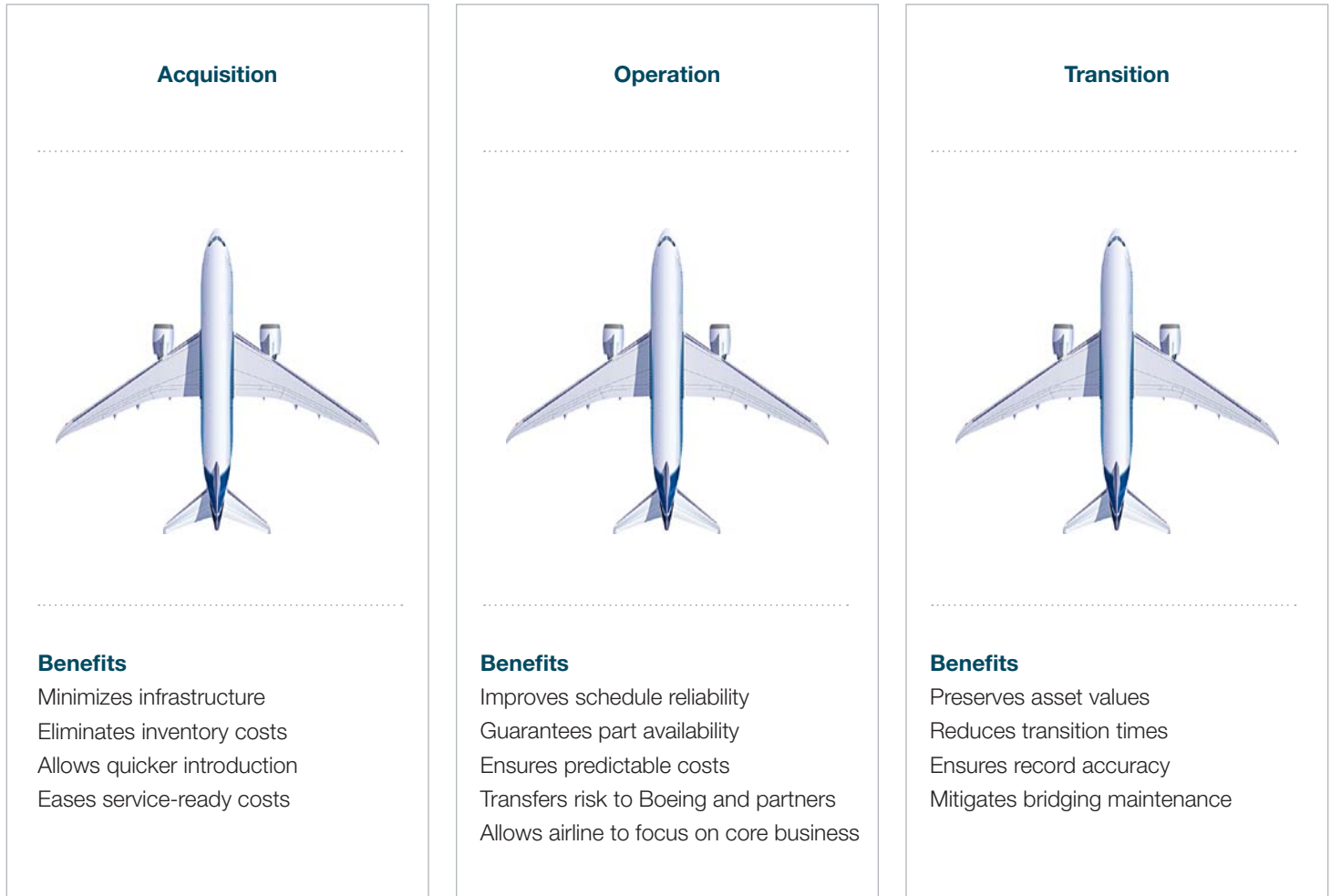
Participating airlines can tailor GoldCare services to shape support packages that best fit their operations.

- Material Management** is a core GoldCare offering. It eliminates the need for an airline to purchase and warehouse an initial provisioning of spares. Material Management integrates spare parts planning, ordering, supplier management, and component repair and overhaul. This service helps GoldCare

customers better use resources, reduce costs, and improve efficiencies. By integrating the supply base into airline operations, GoldCare also allows suppliers to respond more efficiently to parts requirements, ensuring that the right part gets to the airline in a timely manner.

- Engineering** provides the airline with a tailored maintenance program, monitors on-time performance, and maintains and tracks airplane configuration. GoldCare Engineering is designed to maximize a fleet's value and efficiency.

Figure 2: GoldCare benefits for 787 operators



- **Planning and Control** uses real-time airplane movement to continuously update scheduled and unscheduled maintenance events. This group helps maximize airplane availability through the use of Airplane Health Management (AHM), flight following systems, and efficient planning programs.
- **Maintenance Execution.** GoldCare provides parts and work instructions to a network of maintenance providers for line, base, and heavy maintenance activities.

GoldCare Enterprise, the full range of GoldCare services, offers the 787 operator a number of benefits (see fig. 2).

TAPPING INTO THE DATA RICHNESS OF THE 787

Airlines choosing GoldCare Enterprise — the most comprehensive GoldCare offering — will be partnering with Boeing in operating their day-to-day maintenance and engineering activities.

GoldCare Enterprise uses the electronic log book to capture airplane problems and fault codes. Then, using the extensive data capture capabilities built into the 787, these fault codes can be electronically transmitted to maintenance personnel. The ground crew can accurately identify any problems with the airplane and pre-position parts and personnel, thereby minimizing the time the airplane spends on the ground. This remote management of real-time airplane data uses the capabilities of Boeing’s AHM service. (For more information on AHM, see *AERO* third-quarter 2007.)

When maintenance is required, GoldCare provides key stakeholders with full situational awareness of the status of the airplane. It brings the unique and detailed airplane knowledge of the original equipment manufacturer to every maintenance situation.

By monitoring the airplane in real time, GoldCare can proactively anticipate problems, allowing more maintenance to be performed on a scheduled rather than an unscheduled basis.

GoldCare Enterprise also makes fleet planning and tracking more efficient for airlines because of Boeing's integration into the airlines' flight monitoring systems. Using visibility of their flight schedules and routing, GoldCare Enterprise takes advantage of the natural gaps in the flight schedule to plan and schedule maintenance for minimal flight schedule disruption.

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awareness of the status of the airplane. It brings the unique and detailed airplane knowledge of the original equipment manufacturer to every maintenance situation. That can result in more accurate troubleshooting, shorter repair times, and increased airplane availability.

EXTENDING THE GOLDCARE PHILOSOPHY TO OTHER MODELS

While GoldCare is designed specifically to leverage the advanced technical capabilities of the 787, a number of airline operators have asked Boeing about a similar fleet man-

agement offering for other airplane models. As a result, Boeing is working to expand GoldCare-type comprehensive services for additional Boeing airplane models.

SUMMARY

GoldCare offers airlines a flexible new set of support services designed to maximize airplane availability and airline operational efficiency by ensuring that parts, materials, and services are deployed globally whenever they are needed.

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