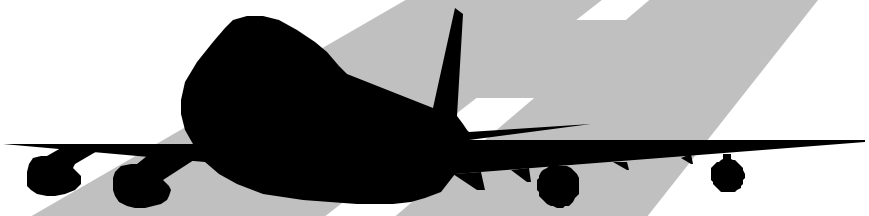

THE AIRPORTS OF TOMORROW

WHAT ALL DECISION MAKERS MUST KNOW BEFORE VOTING: A 20/20 LOOK AT WAYS TO ACHIEVE 2020 REQUIREMENTS

By Dr. H. K. Goerling

EXECUTIVE SYNOPSIS

Requirements:	*Solutions:*
SECURITY	*LARGE, UNOBSTRUCTED AIRFIELD*
SAFETY	*LONG, NON-INTERSECTING RUNWAYS*
EFFICIENT/ DEPENDABLE OPERATIONS	*PROTECTIVE PERIMETER RAMPARTS Built from Excavated Material*
AFFORDABLE Construction & Operations Cost	*UNDERGROUND TERMINAL & SUPPORT FACILITIES*
INTEGRATION of Air- & Ground-Transportation	*TOTAL SECURITY AREA Rather than Security Checkpoints*
ENVIRONMENTALLY FRIENDLY for ALL People at the Airport and Surrounding Residents	*GENERIC GATES for Efficient Arrivals and Departures*
PROFITABLE for Owners & Operators	*EFFICIENT SCHEDULING to Optimize Capacity Utilization*

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AIRTRAVEL 2020

The tragic events of September 11, 2001 and the crash of AA flight 587 left people of countries around the globe shaken and airline passengers frightened. But despite the shock, the world wants to fly. Even now air-travel is returning towards pre-September 11 levels. Undoubtedly demand will continue to rise and create increasing need for new capacity of SAFE and SECURE air-travel to support the economies of the 21st century. The lack of easily accessible and affordable travel, SECURE FROM THE VERY REAL THREAT OF TERRORIST ATTACK and SMUGGLERS, UTILIZING SAFE FACILITIES AND AIRCRAFT would shrink economic vigor and industrial and commercial growth around the globe.

The Key Problem:
What will safe, secure, reliable, affordable, and profitable air-travel require in 10 to 20 years, and what will airports need to look like to support such air-travel volumes and requirements?

It is by no means impossible to reconcile and achieve all goals, but only if all parties develop comprehensive plans and approaches. Is such an airport too expensive? No. What is too expensive is the waste of funds on parallel projects that do not bring intended results. So rather than taking sides or attempting to present definitive proposals and designs, this report intends to trigger thought, objective analysis of realistic, foreseeable must-dos to assure support for a robust, growing air-travel industry for the next 20 to 50 years.

The primary issues that must find solution at least ***FOR THE WORLD'S BUSIEST AIRPORTS*** *(not necessarily all airports) before any construction starts answers the simple questions:*

What will high-volume air-travel require in 10 to 20 years for airlines to operate safely, securely, reliably, affordably, and profitably? And what will major world-class airports need to look like to support such air-travel volumes and requirements?

The following pages contain relevant suggestions. ***However, please, note that these suggestions are intended solely to trigger thinking by airport designers, engineers and builders; they do not pretend to be actual solutions.***

THE AIRFIELD.

- *Large, unobstructed area upward of 20,000 acres.*

- *3 multi-directional non-intersecting runway clusters of 2 – 6 widely spaced runways each for a total of 6 up to 18 runways (see Exhibit 1 on the next page).*

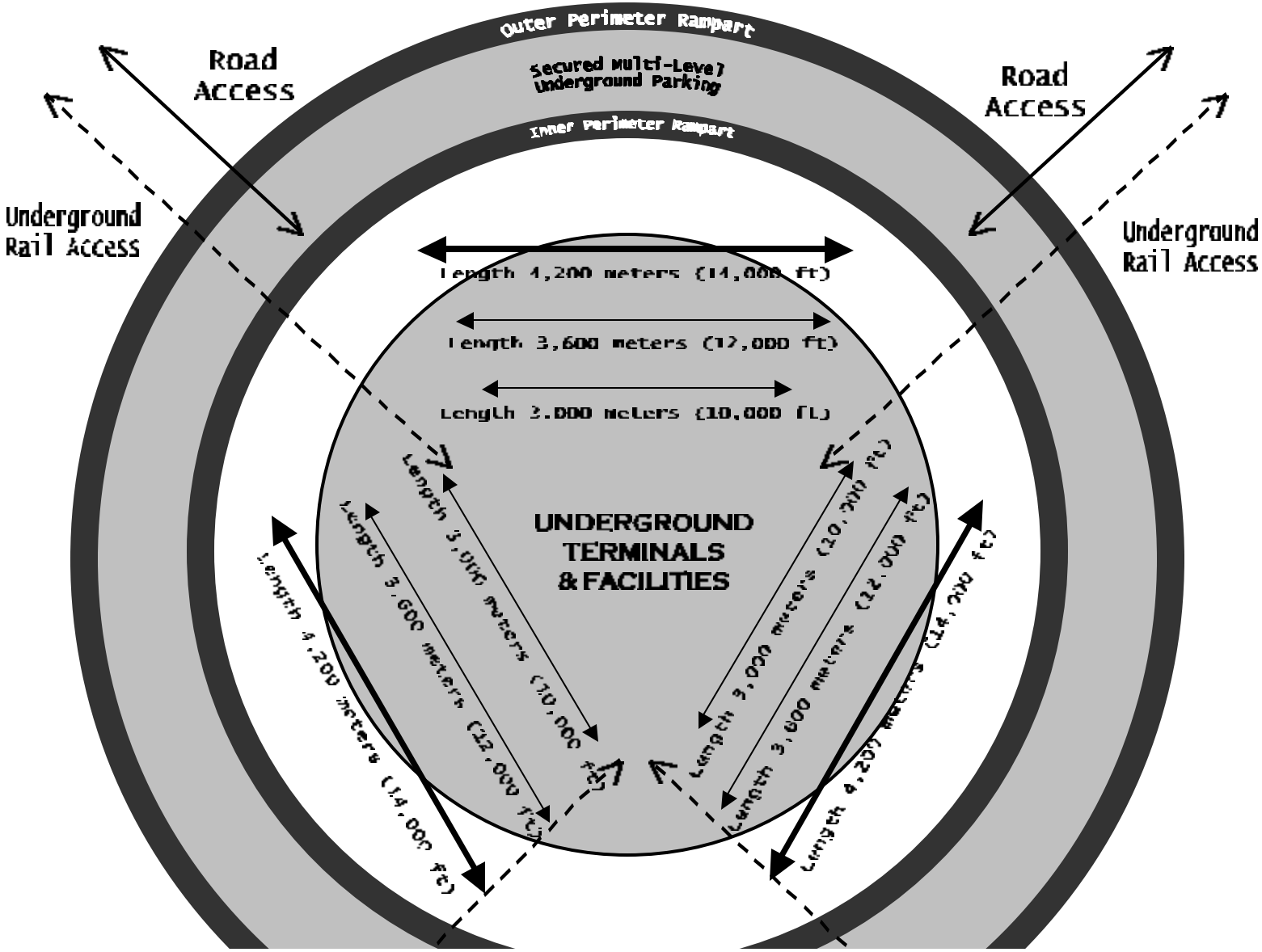


EXHIBIT 1

THE AIRPORTS OF TOMORROW

3 clusters of up to 3 parallel runways each (total of 9; but clusters can be expanded to 6 each=total of 18) Unobstructed, Widely-Spaced, Non-Intersecting,

Wide spacing allows aircraft to ascend in straight lines to above 5,000 or 10,000 feet reducing noise and air pollution levels. Instead planes taking off from narrowly spaced runways must bank sharply to free airspace for next take-off (banking reduces lift and requires more engine thrust, i.e. increased noise and air pollution).

- *Addition of 1 extra wide emergency runway per cluster with additional lights, signals, automatic runway foam, snow and ice melting apparatus, special cameras, etc.*

- *Perimeter secured by 2 ramparts (built from soil excavated while constructing underground facilities)*
  - *to contain ground noise and pollution; and*
  - *to protect against ground attacks.*

- *Limited, secured access*
  - *by car and bus to parking and passenger drop-off between ramparts; with underground passenger check-in (including baggage, and people transport to terminal);*
  - *by rail into departure terminal; and*
  - *for suppliers, service providers, and caterers into secured terminal area.*

- *Air-traffic control tower (which would not provide sufficient ground visibility for such a large airfield, especially at night or in inclement weather) replaced by closely spaced, computer-controlled satellite antennas. The air-traffic-control facility staffed with air traffic controllers will be located on a lower underground floor (see Exhibit 2).*

AIRPORT BORDERS AND SURROUNDINGS.

- *Safe distances from urban and suburban residential areas to avoid noise and air pollution, and to afford sufficient buffer for prevention of unnecessary consequential damages to human life, injury and to property loss.*

- *Using excavated earth, build a 20-to-30-foot-high berm planted with sod, bushes and trees around the airport for noise and pollution containment. Such a berm could also house storage hangars and maintenance facilities.*

AIRPORT OPERATIONS.

- *Airlines will schedule flights to avoid peaks; this will utilize all available capacity most effectively and reduce ground delays. O'Hare, for instance, operates five hours per day at scheduled capacity overload.*

- *Airlines and airports will utilize tickets in plastic imprinted, wallet-size format that include the passenger's picture and fingerprint created at ticket counters (similar to drivers' licenses), checked at security and boarding, and to assure passengers' privacy, eliminated from records upon arrival/deplaning. These tickets also entitle the owner to train transport to another facility if the itinerary warrants.*

- *Airlines using larger planes will reduce number of flights.*

- *Generic gates for disembarking passengers (not dedicated to a specific carrier) to avoid "penalty box" on-ground waiting.*

PEOPLE RECOGNITION, IDENTIFICATION, AND TRACKING: "PASSENGER FLIGHT DATA RECORD"

Passengers currently endure long lines during up-to-three-hour waits prior to departure with praiseworthy demeanor. It is a foregone conclusion that this will change as terrorist phobias decline over time. But fear of flying aggravated by these excessive times will hamper air-traffic growth – especially for short trips - if new technology does not create new, effective devices.

To have single security check-points does not suffice. A recent event at O'Hare emphasizes that need: a man passed the main security checkpoint without challenge; only rechecking at the gate prevented potential disaster. Too many things can happen while passengers wait hours at their gates and wander about the airport. All doorframes, especially at gates and public washrooms, should, therefore, be equipped with weapon detectors for repeated security checks. These devices must allow 3-dimensional scanning similar to current MRI technology, but using safe, non-invasive technology that can locate weapons and potential weapons of any material and threat (guns, knives, bombs, biological, etc.). The addition of recognition software based, among others, on impressive developments in face recognition technology will create effective protection without human attendants and judgments.

Most of all, this equipment must work quickly to speed passengers through the airport from and to their flights; this means no mechanically moving parts.

Therefore, ALL persons – including passengers, flight crews and ground staff – identification (documentary: passport or driver's license, etc. augmented by recognition techniques, such as fingerprint, iris, face) are added to tracking record.

FOR DEPARTURE:

- *Flight reservation including passenger identification constitutes basic data.*
- *Tickets/boarding passes are electronically encoded cards that will serve as basic identification throughout terminal and afford passengers access to gate area as required, identify their luggage, allow to board, seat assignment, etc.*
- *Arrival at first secured entrance adds date, time, mode of transport (auto, bus, train).*

Friends and family cannot proceed past arrival point.

- *In case of automobile, license number, and brand/model are recorded, verified with state license bureau; then tracked to numbered parking spot.*

- *All entrances to terminal full-area-secured, including aisles, stores, restaurants, and restrooms.*
- *People movers from garage or arrival stations move passengers to departure gates. Boarding by extendable escalators.*

- *Baggage check-in close to parking and train/bus station. No or minimal carry-on to expedite boarding and reduced risk of carry-on weapons or bombs. Baggage tag information added to record.*

AFTER ARRIVAL:

- *Disembarkation via extendable/retractable escalators to gate area people mover station for transport to most convenient exit gate for their car location or train/bus station.*
- *Baggage will be routed automatically to claim point nearest parked car or appropriate train/bus.*

- *At exit, equipment collects and keeps passenger flight identification cards, in exchange for paper-printed receipt, if requested.*

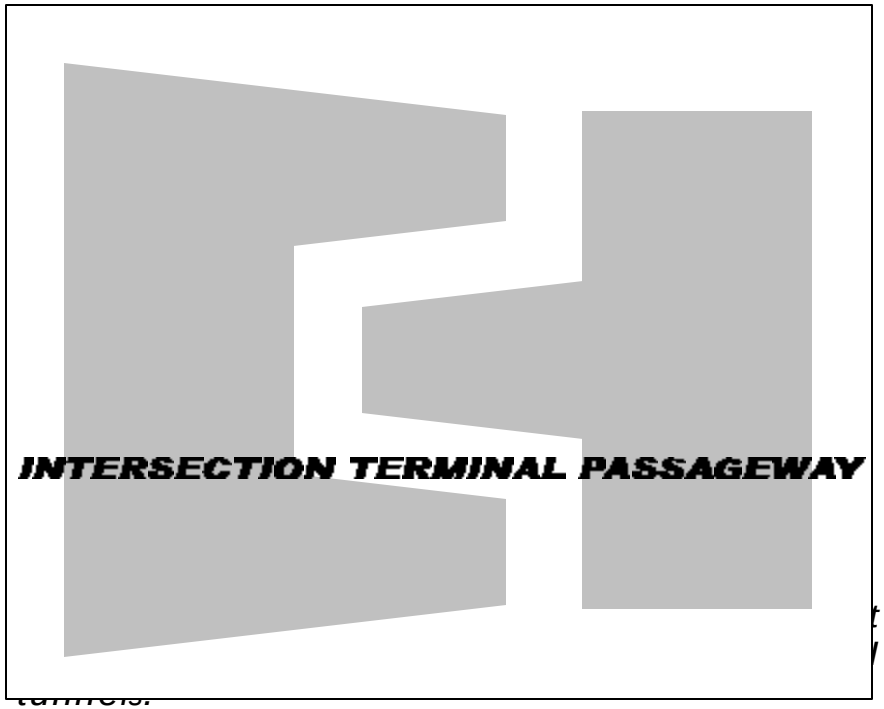
TERMINAL FACILITIES.

New terminals and airport support facilities will probably undergo the most significant changes in construction methods and materials; in fact, much of the needed technology is at best on drawing tables and has yet to be developed. But with the developmental cycle for a new generation of airports 10 to 20 years into the future, the greater risk will exist in the temptation of airport builders and funding decision makers to commit to current or even past technology rather than define needs and appoint engineers to find essential solutions.

- *Underground for security, safety, and efficiency: Large TV-type screens to simulate windows.*

Secure, bomb-, missile-, earthquake- and hurricane-proof, underground structures. Should terrorists pentrate security, 2m to 3m thick firewalls separating terminal sections with zigzag connecting passage ways (see schematic on following page), and security surveillance will contain explosions or biological attacks including "dirty" bombs. Extra strong ceilings (the surface runways) will protect terminals, garages, hotels, medical clinic, and train stations against air attacks allowing all of them to serve in crisis situations as bomb- and biological-weapons shelters for passengers and ground staff.

It is recognized that such construction is only practical for a from-scratch, open-field location.



- *tunnels.*

- *Underground facilities require less surface space/area and leave airfields uncluttered and unobstructed for 24/7, all-weather, safe operations with nearly perfect visibility..*

- *Comprehensive security system. Entrance door to planes, trains and busses should be equipped with item-categorizing security scanners and cameras complete with face identification software.*

- *Protects passengers and staff against collateral damage from catastrophic accidents or terrorist attacks.*

- *"Security check-points do not suffice; they are too easy to penetrate and circumvent despite their enormous cost. New airports, their facilities (aisles, restaurants, waiting areas, rest rooms, offices, crew quarters, etc.), grounds, surroundings, and aircraft must be secure in their entirety by continuous surveillance of passengers and their belongings on airport property from point of airport entry until flight departure, throughout trip, and from flight arrival until leaving the airport.*

- *Tightly controlled access to aircraft for servicing and catering. According to Boeing, current operating procedures require and allow up to 12 vehicles with driver and crew access to an aircraft while preparing for departure – a frightening exposure and security risk.*

- *Unlike surface structures, underground facilities and their access points and entrances offer highest levels of security.*
- *Underground people transport systems ("people movers") deliver passengers quickly, promptly, conveniently and comfortably from parking or trains to waiting areas or gates.*

- *Generic gates (not assigned exclusively to one airline) allow quick arrival and departure. Gate area customized by wall-sized computer-screens carrying airline identification and advertising.*

- *Passenger boarding and disembarking via extendable/ retractable escalators from gate waiting area directly to plane door.*

- *Cater flight via extendable/retractable elevators. Flight crew inspects and accepts delivered goods at bottom of elevator, then hoists to aircraft: this avoids caterers staff from having access to aircraft.*

- *Terminal Support Systems:*

  - *Security headquarters and detention facility.Generator powered by natural gas, gasoline, or "there must be/maybe a safe way to use nuclear energy!"*

  - *High-capacity air conditioning and air filtration systems for human comfort, able to flush and purify air in all facilities rapidly in case of attacks by biological or chemical weapons of mass destruction.*
  - *Drainage system to handle run-off from large paved runways and taxiways, water filtration/treatment with reservoir for re-use.*

- *Storm/bomb-shelters and hospital with surgical capabilities and quarantine station.*

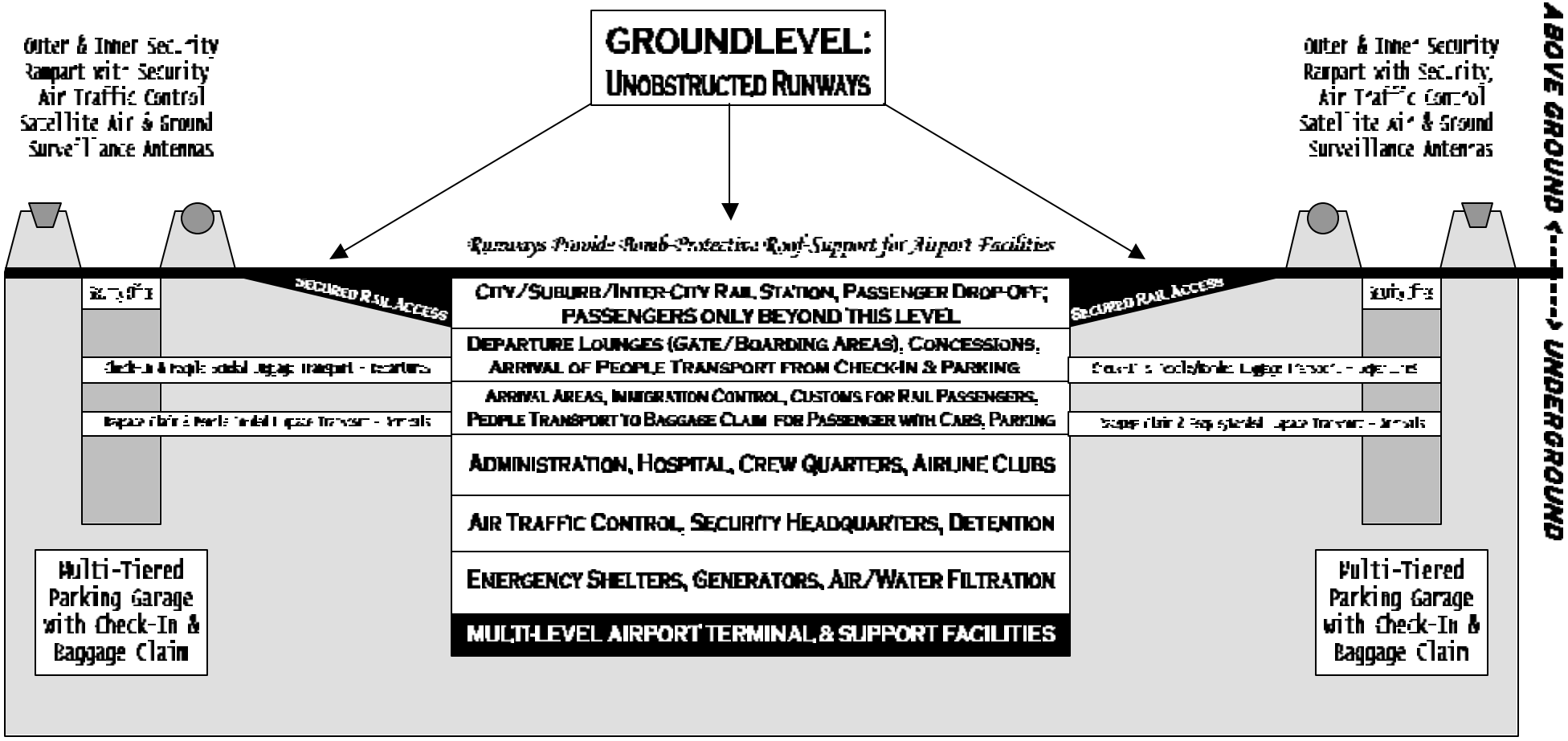


EXHIBIT 2

THE AIRPORTS OF TOMORROW
Horizontal View

THE AIRPLANES OF TOMORROW.

High-speed, long-range, high-efficiency planes possibly at a surcharge for shorter flying times and quick boarding and disembarking.

Large planes to reduce number of flights. That presumably will reduce cost for airlines and passengers and airspace congestion. However, aircraft carrying 500 to 600 passengers may reduce the number of flights, they will create airport congestion and bottlenecks. To fill such a large aircraft will require many feeder flights creating peak demand for airspace possibly negating the advantages of fewer, but larger airplanes in the sky. Connecting passengers must then make their way to specific gates causing significant foot traffic and crowding. Boarding times will rise for passengers, in-aircraft wait-times (from boarding to finish, final baggage loading, extra catering, etc.). Similarly disembarkation will require very long times with baggage claim always a potential nightmare.

Large commercial aircraft are also likely to have somewhat limited range due to their full-load weight, and they will need longer runways for take-off and landing.

Weapon detectors in every aircraft door and in lavatories. After clearing security, passenger mill about gate areas often for hours. Any number of nefarious things may happen in that period of time, such as retrieving guns previously deposited in public restrooms by accomplices, etc. Such motion/heat-activated equipment would benefit especially large planes with their high passenger counts.

Properly refined these detection devices should incorporate so-called "lie-detector" technology to recognize passengers that may cause problems during the flight.

Today's baggage handling causes delays and too often misdirects bags. Service to passengers will improve by the following:

No overhead bins to speed safe departures and arrivals.

Direct, automatic loading and unloading of baggage on secured conveyers to baggage at every gate. All hydraulic and electrical drives are located in the ground as their weight would exceed aircraft's carrying ability.

Safe cockpits are much in the news. However, surveillance cameras, weapon detectors (today's metal detectors are woefully inadequate) and

automatic defense devices need to become part and parcel of an in-flight protection system. Bullet-proof double-door cockpit vestibules - only one door can open at any time unless released by the flight-deck crew – prevents invasion of the cockpit and could possibly trap unauthorized persons or intruders between impenetrable doors.

Vertical take-off and landing; low-speed landing for safe use of short runways.

On-board navigational aids with precision positioning capabilities for flexible flow-management and variable spacing control.

Aircraft controllable from ground in case crew is not capable of flying plane as in the case of golf champion Payne Stewart, or hijackings.

High fuel efficiency, low noise and pollutant emissions from improved engines.

GROUND-TRAFFIC INFRASTRUCTURE.

- *Unimpeded road access from all directions.*
- *Secured, patrolled airport parking.*
- *Capture car license plate numbers for passenger protection for contact in case of actual or attempted theft and vandalism. This could also identify abandoned parked cars.*

AIR-GROUND-TRAFFIC INTEGRATION.

- *Travel and traffic systems of the future will need and want to integrate various modes of transport. Undoubtedly the integration of air and rail offers great advantages:*
- *Creation and support of AIRPORT-NETWORKS for major metropolitan areas by connecting all available airports by high-speed, high-frequency rail service. New York has 6, Los Angeles 5 airports all served by the major airlines. Greater Chicago could utilize 5 or 6 airports including a yet-to-be-built airport in a suitable, spacious suburban setting (see map on following page). High-speed train connections capable of speeds up to 120mph (comparable to railroad connections from Washington to Boston) connecting all airports servicing the same region and cities which trains can reach in 3 to 4 hours, generate tightly woven, practical AIRPORT-NETWORKS. For instance, in Greater Chicagoland a third airport would connect:*

- *to O'Hare airport (possibly along the (I57/I-294 right-of-way),*
- *to Midway airport, Chicago's 2nd major airport,*
- *to the Chicago Loop and business centers,*
- *to Springfield, IL, Bloomington, IL, and St. Louis,*
- *to Gary, IN, Detroit, Cleveland, Toronto,*
- *to Rockford, IL, Madison, WI, and eastern Iowa,*
- *to Milwaukee, WI, Rochester and Minneapolis, MN,*
- *to other northern points where air- and road-traffic is often hampered by inclement weather.*

- *Multiple airports, thus, can work in virtual unification or an "Airport-Network" if reliable, high-speed, frequent trains connect airports. In Chicagoland, it should become quite possible to travel by rail from/to O'Hare to/from Midway in under 20 minutes and to/from Peotone in about 30 minutes.*

- *Assured connections reminiscent of Eastside and Westside terminals in New York City: "You make your train, you make your plane."*

- *Planes will hold for arrival of designated trains except in emergencies.Specially equipped trains can check identity of passenger and luggage.*

MAP OF

- *Due to long check-in times short-distance travel by air has become of questionable*

efficiency and cost; more and more travelers – both business and pleasure – resort to train, bus, or automobile alternative routing.

WHAT CAN AND SHOULD BE DONE NOW.

Existing airports have a number of valuable options to improve operating efficiency, flexibility and noise abatement very quickly. They consist largely of computer-assisted management and mathematical modeling techniques to optimize operations within existing facilities (constraints). These could and should be developed and implemented fast and without waiting for new runways. The cost is modest and reasonable yet will bring marked benefits but they do demand high competency on the project teams with expertise in the following:

Detailed, practical understanding of flight and airport operations. Too often such system design and development are left to technicians to design. This results invariably in failure and financial waste (the FAA has several of those to its credit). Systems that assist airport operations, airlines and air traffic control cannot and must not be left to technicians only, though their assistance in developing effective processes is essential. Yet success depends on the commitment (ham and eggs = chicken is involved, pig is committed) and unwavering support of airport operations managers, key airline schedulers, selected senior pilots, and air traffic controllers, supported by

- *The Federal Aviation Administration (FAA),*
  - *Airport engineers and operations managers,*
  - **Process reliability and safety engineering,**
  - **Competent computer systems engineers and scientists,**
  - **m***athematical and probabilistic experts,*
- *Airlines (see comments below) and airline pilots,*
- *Aircraft manufacturers,*
- *Construction companies and experts (such as Bechtel,Hochtief, e.a.).*

- *Experienced U.S. and foreign airport designers and international experts, for instance, from Britain, Germany (Hochtief, for instance), Hong Kong, and Japan.*

- *Several systems are under development most notably the one recently announced by Boeing which has apparently devoted a special division and considerable talent and funding to this effort.*

- *Continuous, live (real-time) communications between tower and aircraft from approach (air-to-ground) to gate arrival (ground) – both automatic (aircraft identification and satellite positioning) and human intervention (air traffic controller interaction, intervention, and emergency override). Live communication greatly improves safety and creates enormous flexibility.*

- *Airlines should use restraint in scheduling flights beyond capacity. According to information provided by the City of Chicago, daily flight volume exceeds capacity by up to five hours.*

- *Airlines can also do much to reduce delays by improving check-in procedures for more on-time departures and faster turn-arounds; for instance,*
  - *enforcing carry-on baggage rules (number and size pieces) will speed boarding and disembarkation significantly.*
  - *increasing staffing of ticket and check-in counters.*

SPECIAL ADDENDUM

CHICAGO OHARE'S CURRENT EXPANSION PLANS

SPECIAL ADDENDUM:
Chicago O'hare's Current Expansion Plans.

The world's busiest airport, O'Hare Airport, Chicago, Illinois, offers a valuable case study. Half a century ago O'Hare became the "new, bigger, brighter" airport that would replace Midway Airport as the busiest. Airlines realized they needed longer and more runways and larger terminals to handle the growing passenger population. O'Hare served its public well for a long time.

During the 50 years since O'Hare opened, it handles 900,000 operations per year which are expected to grow to 1.6 million in the foreseeable future. Yet such success comes at a price. During the last few years, air traffic delays have become painfully routine; the understandable complaints by the traveling public have reached the attention of the federal government with demands for remedy. Suburbs around O'Hare suffer from the constant onslaught of roaring jet noise that disturbs and indeed limits sleep, disrupts school education and inserts awkward pauses into conversations. Perhaps worst of all, engine exhaust creates dangerous air pollution since O'Hare was built for less traffic, older airplanes and times of relative security. Yet it rendered its predecessor Midway obsolete. All major airlines moved to the newer, larger, and at the time more efficient O'Hare. In addition, local infrastructure of roadways and public services are overloaded and occasionally approach gridlock.

The City of Chicago has made plans to expand O'Hare. Key features include better ground access and rearranging existing runways to build an east-west array of six parallel runways. But the existing O'Hare facility is obsolete, unprotected, and – worst of all - much too small. Despite Chicago's insistence to the contrary, there is no conceivable way to build sufficient capacity for 1.6 million operations annually and growth beyond that point into O'Hare's crammed 7,000 acres even with maximum realizable eminent-domain expansions. No amount of effort and money could reduce delays in view of increased operations nor improve O'Hare's security to levels so painfully necessary as a primary need after the September 11, 2001 disaster in New York, Washington, D.C., and Pennsylvania.

Understandably O'Hare-adjacent suburbs protest the intensifying noise and air-pollution level associated with an expanding O'Hare Airport. As an alternative opponents to O'Hare expansion have proposed an alternate site southeast of Chicago at Peotone, Illinois. This area has at least 24,000 acres available and could, therefore,

accommodate presumably a sufficiently large airport with capacity for decades to come.

As America finds itself at war with elusive, ruthless terrorists, new and previously unimaginable security requirements have emerged. For instance, it takes dozens of people and vehicles with nearly unrestricted access to airplanes and airports to ready a single flight for departure, rendering the entire operation dangerously vulnerable. Checkpoints are proving dangerously inadequate: continuous checking by computer-controlled sensors throughout airports and aircraft must replace people with poor machinery. Mere upgrades and improvements do not work: there is no right way to do the wrong thing. Even the Chicago Tribune, staunch advocate of Chicago's airport expansion plans, acknowledges that Chicago may have to make changes in recognition of increased security demands; its security provisions pale in light of the requirements of terrorist attacks.

This constitutes a quandary of gigantic proportions. O'Hare as the world's busiest airport constitutes the economic engine for Chicagoland, an area consisting of Chicago, its suburbs in Cook and major parts of adjacent counties, and in fact the states of Illinois, Indiana, Iowa and Wisconsin. O'Hare connects mid-America with the world and has spawned and maintains a dynamic business climate most attractive to businesses (note the recent relocation of Boeing's headquarters from Seattle) and allows Chicagoland to host many conventions and tourists that add billions of dollars annually to local economies. Such benefits must not be lost: Chicagoland and the American Mid-West need air-travel and air-transport capacity to support profitable growth during the next 50 years.

Clearly action is needed. But multi-year lead times and astronomic costs of airport construction demand vision and professional, practical planning. There are several spectacular flops in the past that prove the point. What is the key reason for these failures? The attempt to build airports and support facilities for the future with obsolete technology of decades ago is doomed to falter. And ignoring security and relegating it to minimum-wage personnel and standards of performance has already brought terrible consequences.

Chicago Mayor Daley is right, of course: Chicago needs visitors, and travelers "do not come to Chicago by bicycle or skate boards." The pilots are also right: they demand safe runways (AA flight 587 may have crashed because it took off from the same runway as the JAL 747 that preceded it by minutes) and airport facilities.

Passengers, of course, have a right to expect safe and secure transit. Nearby residents demands are likewise proper: they deserve tolerable quiet and cleanest possible air.

In Chicagoland the argument over O'Hare flight delays and capacity problems has regrettably eroded into a political melee and free-for-all of the worst kind. Chicago has mustered a wide variety of forces to demand expansion of O'Hare. The proposed use of "eminent domain" rights by the City and the State to take private property (several hundred residences and small businesses) to expand O'Hare's meager 7,000 acres points to the obvious inadequacies of O'Hare as an airport of the future:
Unfortunately, expanding O'Hare would result in an inadequate facility with limited capacity unable to handle projected traffic volume built at exorbitant expense. It also will place Chicago's world-class standing as the most important air-traffic center for the future in question; and it would kill the opportunity to build a true 21st century airport facility as THE world's model for the next half century.

Airlines have said about Peotone that "if you build it, we won't come." They add that "airlines are a for-profit business; we only go where the business is." This attitude stems from the assumption that Peotone would at best be the poor relation to O'Hare with similar facilities and capabilities. And if airlines continue to fly out of O'Hare then there is, of course, no reason for passengers to go anywhere else. But a truly new airport has security something that passengers will value very highly as evidenced by waiting patiently for hours in security check-lines. A new airport will also have significant operating cost advantages that will exceed the worthy, but aging O'Hare. That will capture the airlines attention – and they WILL MOVE.

Opposition to O'Hare expansion in turn tries to stop further runway construction because of the intolerable noise and chemical air pollution suffered by surrounding suburbs. These are clearly important health and safety issues, and their defenders have succeeded for more than two decades to moderate, though not stall and stop unbridled expansion. But these efforts do not do justice to Chicago as a world-class passenger and cargo air-traffic center nor the inevitable need for more national, international, and indeed global capacity the 21st century will require.

The proposal to build a new airport in Peotone, IL, south by southeast of Chicago deserves intelligent consideration if only to start design of what future air-traffic will truly need. This issue is much too important to let preferences and favorites stymie progress, delay completion, and waste

astronomic amounts of money. Worst of all, a valuable undertaking that will take 15 to 20 years from design to completion appears to deteriorate into personal skirmishes for political and financial advantages: Chicagoland, Illinois, the Nation and the world must have 20/20 visibility of future air-traffic needs two decades ahead.

Thus, as the tragic events of September 11, 2001 have "put the airport projects on the backburner," to quote George Ryan, Governor of Illinois (spoken on October 1, 2001), this hiatus should be used to design an appropriate facility. This process will take three to five years. But forcing a decision without such a plan as demanded by Senator Durbin and others will spell the death knell for Chicago ever having the world's greatest airport. At best O'Hare will rate as the most expensive, under-performing airport facility that will continually require increasingly large infusions of capital to remain active if only temporarily and poorly.

Will O'Hare cease to exist as part of this project? Of course not. It will continue to prosper totally integrated in the network of Chicagoland airports by high-speed railroad that O'Hare's illustrious experience helped define.

SUMMARY AND CONCLUSION.

This important opportunity to build an air-travel system for the 21st century must not become a tug-of-war between the City of Chicago and O'Hare versus the suburbs and Peotone. No argument, Chicagoland needs a more capable air-travel system. But O'Hare is too small to provide the essential safety of up to six runways in three directions. Its existing facilities present insurmountable security problems. Modification of its runway configuration would take longer than building from scratch with massive delays while runways shutdown in the process of switching them. O'Hare's location in closest proximity to established suburbs will always remain a difficult situation dangerous to residents. Chicago estimates O'Hare's expansion costs of two projects for buildings and runways at $12 billion; opposing estimates place the cost at $20 billion. This exceeds practicality and common sense because the end result would still not suffice to meet anticipated capacity needs: spending lavishly to repair an old car does not improve its value; it is still an old, inadequate car. To wit,

- *O'HARE SIMPLY IS TOO SMALL even when expanded as much as possible. Safe and efficient airports will require in excess of 20,000 acres.*
- *O'HARE'S EXISTING ABOVE-GROUND FACILITIES – as at almost any airport now*

operating – BELONG TO A PAST GENERATION OF AIRPORT TECHNOLOGY; as such they are vulnerable and nearly impossible to secure at any reasonable cost.

- *O'HARE'S LOCATION CLOSELY SURROUNDED BY SUBURBS ENDANGERS RESIDENTS' HEALTH, and in extreme cases life and limb of its neighbors.*

THE SEARCH FOR SOLUTIONS.

To find essential solutions to handle growing airtravel safely, securely, reliably, affordably, and profitably in 10 to 20 years and beyond demands the synergy of all contributors who have relevant knowledge and knowhow of potential and practical technological improvements:

- *Safe, fully secured underground terminal facilities.*
- *Multiple/multi-directional runways spaced for no-delay, safe all-weather operation.*
- *Secure facilities with multiple, no-waiting, check-on-the-move, automatic screening/scanning devices.*
- *Virtually integrated travel modes: air and high-speed trains.*
- *Check-in controls and documentation using machine readable codes to identify every person in the facility or airplane including luggage and vehicles used for transport to airport.*
- *Airplanes safe from attacks by hijackers; this will require security scanners at all cabin entrances and lavatories, convenient luggage check-in that removes hand-baggage from cabin, and fewer vehicles and service staff with access to the aircraft prior to departure.*

The City's and State's current, but fleeting opportunity to build an airport for the future will not recur for 50 to 100 years: CHICAGO, CHICAGOLAND, ILLINOIS, THE U.S. AND THE WORLD MUST NOT AND CANNOT AFFORD TO LET IT ESCAPE in an ill-advised attempt to salvage a once great airport that has by its very success surpassed its usefulness. It is worth remembering that O'Hare has taught the world much about how future airports must operate and how they must look.

But today Chicago's consulting airport engineers act as irresponsibly as did and do major accounting firms, including Chicago's A. Andersen, who go for big fees rather than big benefits to the citizens of Chicago and its surrounding suburbs. They follow the whims and

wishes of Mayor Daley e.a. whose management of billion-dollar projects such as Millenium Park and the Deep Tunnel, is notorious for astronomic cost overruns: O'Hare ezpansion is just another financial and operations disaster on its way.

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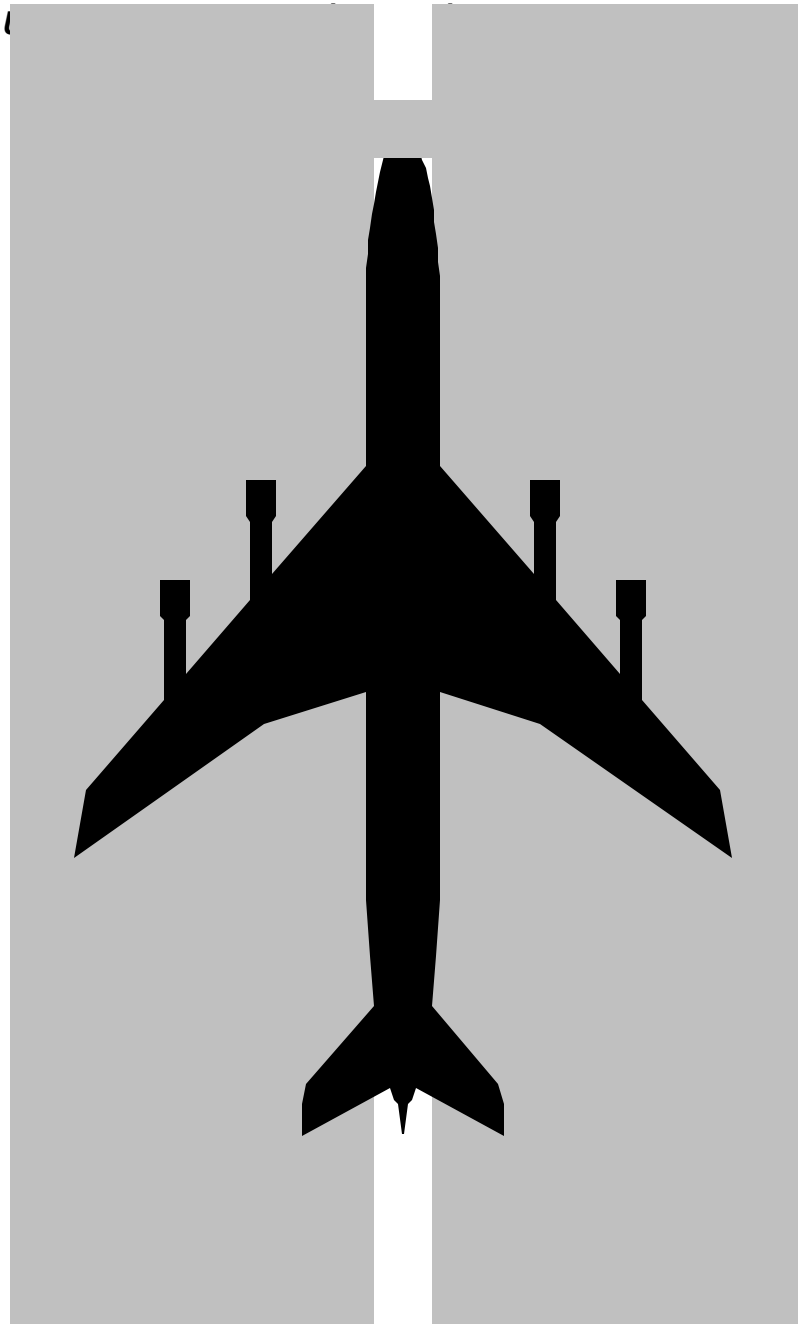

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