

# ***World SkyCat***



**World SkyCat Ltd.**

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## *The SkyCat*

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The SkyCat is a revolutionary new air transportation vehicle, with unique capabilities ideally suited to a broad range of functions in all areas of the world – from tourism to disaster relief, from border surveillance to the bulk transport of produce from remote areas.

By combining the advantages of lighter-than-air lift derived from helium (as an airship) and aerodynamic lift derived from its hull shape (as an aircraft), the SkyCat creates a vehicle of exceptional versatility, payload and endurance.

The unique hover-cushion landing system, deployed on landing and retracted in flight, enables the SkyCat to land and take off from virtually any unprepared surface – land or water, desert or snow. By reversing the hover-cushion engines on land, the vehicle is able to “suck down” and remain stationary, eliminating the need for ground crews or handling equipment and providing a full roll-on / roll-off capability. Exceptionally safe in flight and low in both operating cost and maintenance, no other air vehicle can offer anything remotely comparable.



The SkyCat is designed and manufactured by the Advanced Technologies Group Ltd. (ATG), based at Cardington, UK, the world's leading lighter-than-air design and construction company, backed by over 25 years' experience and supported by some \$500m of sunk costs.

World SkyCat Ltd. is the marketing and operating associate of ATG for the SkyCat range and the launch customer for the first SkyCat-20. This vehicle is currently under construction and is scheduled for first flight in 2nd-qr. 2002 and certification by end 2002.

World SkyCat Ltd. is established to provide a full range of services for end-users, including:

- **Leasing:** in association with leading global financial institutions, World is able to offer comprehensive lease finance packages with maximum flexibility of lease duration and financial terms.
- **Operating:** World can offer a full functional operating service, whether on a dry lease or full ACMI basis.
- **Customising:** World is able to offer a bespoke interior fit, equipment design and installation service so as to adapt the basic SkyCat configuration to the customer's operational requirement.
- **Training:** for customers intending to operate and maintain SkyCat vehicles themselves, World can offer pilot type-conversion courses and maintenance engineering training through ATG.

While leasing vehicles to end-users under period contracts, World intends rapidly to build up a fleet of fully-owned SkyCats that will be made available for charter on a short-term basis and offer the customer maximum operational flexibility.

The SkyCat is being developed in three lift-sizes: 20 tons, 220 tons and 1000 tons. All share the same basic configuration. They can operate in all weather conditions open to a standard civil aircraft. Each model in the range has its optimum fields of application but all share in the unique advantages that result from the key features of the design.



## Key Features

**Large Payload:** the SkyCat-20 has the flexibility and penetration of a helicopter but with a considerably greater payload capacity, while the SkyCat-220 significantly out-scales and out-performs all existing air freight transport alternatives.

**Long Range and High Endurance:** the standard operating range of the SkyCat-20 with 16 tons payload is 2,400 nautical miles at cruise, enabling the vehicle in a surveillance role (for instance) to remain on station for up to 10 days at a time if required. The standard range for the SkyCat-220 is 3,250 nautical miles, making it ideal for bulk transport – (e.g.) of fresh produce direct from grower to market.

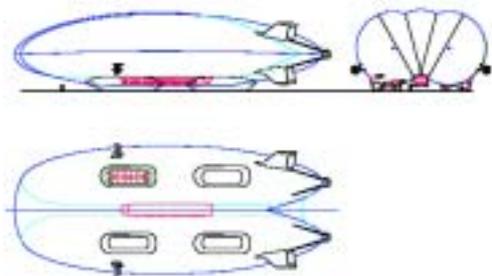
**Low Capital and Operating Costs:** the capital cost of the basic SkyCat-20 ranges from \$25m-\$28m and the direct operating costs are under \$1000/hour. The capital cost of the SkyCat-220 is \$80m-\$92m and the operating cost under \$1400/hour (see page 21). When relative speed is factored in, these costs compare highly favourably with both aircraft and shipping alternatives. In fact, the SkyCat fills the gap in the transportation market between fast, high-cost air transport and the slow, low-cost sea alternative, as below:

**Low Maintenance:** scheduled maintenance is just 2 weeks per annum and can be conducted in the field without need of hangaring.

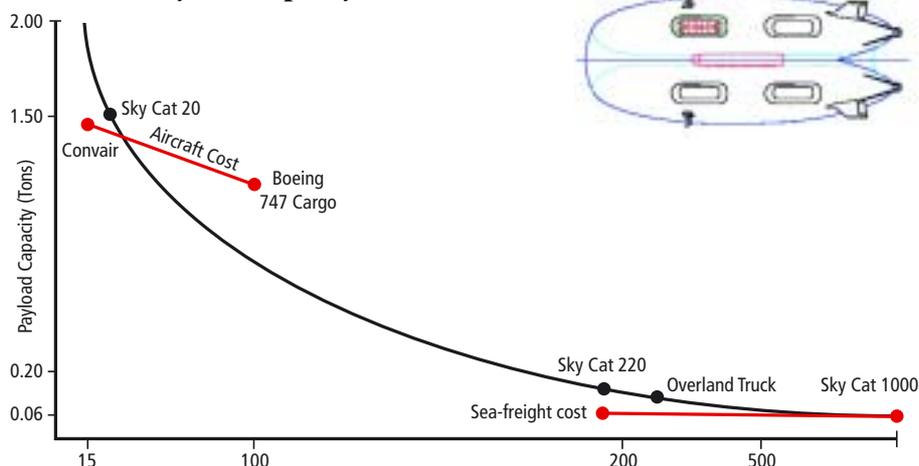
**High Safety Level:** natural buoyancy and special design features offer a virtually zero catastrophic failure mode (see page 6). Low I/R signature and high tolerance to damage and ordnance/missile attack make the SkyCat a uniquely safe flying vehicle.

**High Fuel Efficiency:** with its two stern engines running in the wake of the hull, the SkyCat achieves high fuel efficiencies due to reduced vehicle drag. The fuel burn per ton/km for the SkyCat-20 is well under 50% of that of a C-130J transport aircraft and just 25% that of a 40-ton truck.

**Low Infrastructural Requirement:** able to land and take off from any reasonably flat terrain, water included, without the need for runways, hangars, ground crews or handling equipment, the SkyCat offers the ideal, environmentally sensitive vehicle for transport over long distances into remote regions.



Cost vs Payload Capacity



Like all lighter-than-air vehicles, the payload capability of the SkyCat increases exponentially with size. Unlike airships, however, its aerodynamically-derived lift enables the SkyCat to gain significantly further from the benefits of scale.

**Light/heavy range:** while conventional airships are limited to operating in a narrow band between approx. 5% light and 8% heavy, the SkyCat can operate between 8% light and 40% heavy, thereby greatly increasing its payload capability while eliminating the need for taking on ballast on discharging its load.

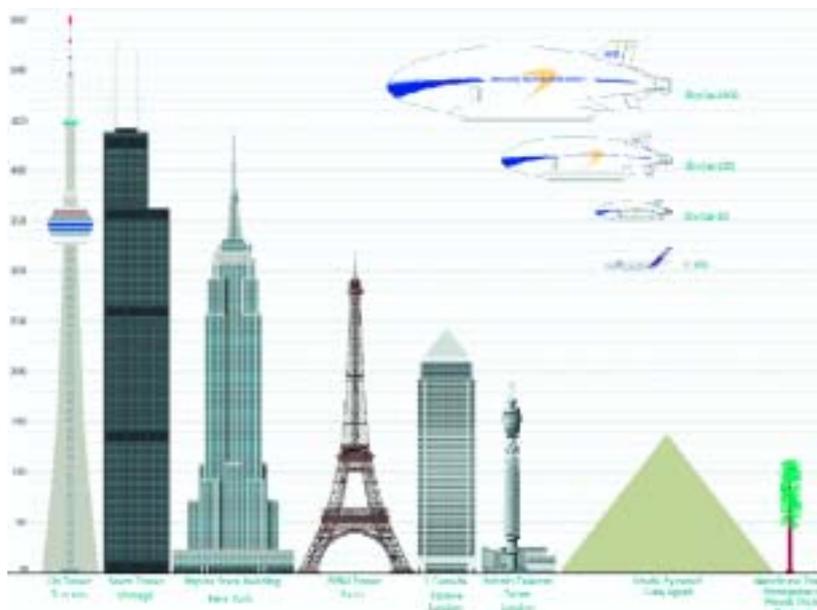
**Landing and takeoff distances:** in STOL mode, the SkyCat can land and take off in five hull lengths, while in VTOL mode, by virtue of vectored thrust engines, the vehicles are literally able to set down and lift off in their own length.

**Hull pressure:** the hull is a pressure-stabilised, non-rigid structure, operating at 1%-2% pressure above ambient, with the shape maintained by ballonets (air bags) which automatically deflate and inflate to compensate for changes in outside pressure.

**Material construction:** the envelope is constructed of heat-bonded, high-tensile laminated fabric, incorporating a Mylar film that provides the gas barrier. The lift gas is helium and totally inert. The payload module is formed from Kevlar composite material of exceptional strength and can be configured for whatever interior design fit is required.

*Summary of basic data:*

Overall dimensions:	SkyCat-20	SkyCat-220
Length:	81.0m	185.0m
Height:	24.1m	47.0m
Width:	41.0m	77.3m
<b>Payload module:</b>		
Length:	25.5m	64.0m
Height:	2.6m	4.8m
Width:	3.5m	7.8m
<b>Payload:</b>		
Standard STOL mode:	20.0 tons	220.0 tons
Hover/VTOL mode:	14.5 tons	160.0 tons
<b>Range:</b>		
Max payload, at cruise:	2,400 n.miles	3,225 n. miles
<b>Speed:</b>		
Cruise:	75 kts	80 kts
Sprint:	85 kts	95 kts





## Safety

SkyCats are inherently safe and tolerant to hazard. Key points to note are:

**Lift gas:** the lift gas (helium) is not merely inert but acts as a fire extinguisher.

**Structural safety:** the natural buoyancy and special design features of the SkyCat offer a virtually zero catastrophic failure mode. With the internal hull pressure maintained at only 1%-2% above surrounding air pressure, the vehicle is highly tolerant to physical damage or to attack by small arms fire or missiles.

**Storm and turbulence:** while on long-haul flights weather patterns would be flown to avoid bad weather, the sheer mass of the hull largely dampens out the effect of turbulence – just as a large tanker rides through rough seas.

**Lightning strike:** constructed mainly from composite materials, the SkyCat offers a poor lightning target and, should it be struck, built-in protection devices ensure that the risk to the vehicle and its cargo is minimal.

**Structural vulnerability tests:** a series of tests were carried out by the UK Defence Evaluation and Research Agency (DERA) on a Skyship 600, an earlier airship built by the Munk team to a similar pressure-stabilised design. The picture below shows the airship two hours after several hundred high-velocity bullets were fired through the hull. Even after this intensive assault, the vehicle would have been able to return to base.



© CROWN COPYRIGHT 2001

*An earlier Munk airship: two hours and several hundred rounds of high velocity fire later, and still able to fly*

To demonstrate the new technology, a fully working model at one-sixth linear scale has been built at ATG's manufacturing facility at Cardington, UK, the historic home of the British airship industry. On 23rd July 2000, this craft made its first flight. A new aircraft type was born.

This vehicle, dubbed the "SkyKitten", proved the key features of the new technology. Aerodynamically highly stable, with low drag and full STOL/VTOL capability, the SkyKitten demonstrated its ability to take off and land equally on land and water, to manoeuvre with total control and autonomy and to anchor itself in "suck-down" mode without need of any ground personnel or equipment.

The first SkyCat-20 is currently under construction and is scheduled for first flight in 2nd-quarter 2002 and full certification by end-2002.



Production work on the SkyCat-220 has already begun, with the first vehicle in this range due to be available in mid-2003.

Initial design work on the SkyCat-1000 is under way, with production scheduled to commence in early 2005.





## *SkyPatrol: Surveillance/Border Control*



The SkyCat-20 offers the ideal solution to the vital need for a high-endurance, low-cost and versatile airborne platform for missions such as border control, counter-drug operations, coastguard search and rescue, harbour traffic monitoring and police surveillance – as well as civil uses such as surveillance of gas and oil pipelines.

Existing airborne solutions necessarily involve compromises between range and payload, endurance and cost. By contrast, the SkyCat-20 SkyPatrol offers the optimal surveillance platform for the full range of security operations. In particular:

**Hush and stealth:** cruising on its rear engines, the SkyCat is extremely quiet, while composite construction materials give an I/R and a radar signature as small as that of a light aircraft.

**Long endurance:** typically, 7 days on station on a 4,000-mile patrol mission. If required to land and take off vertically (VTOL), the vehicle has a 3-4 day endurance capability. The spacious cabin



provides ample operational, accommodation and recreation room for flight and technical crews for the duration of their duty-cycle.

**Surveillance payload:** even in VTOL operation, the SkyCat can carry up to 10 tons of military equipment, sufficient to provide a complete technical surveillance suite, including the large radar antennae necessary for penetrating jungle canopy, advanced “sniffer” and E/M detection devices and the latest infra-red imaging equipment.

**Low vulnerability:** the SkyCat is virtually impervious to automatic rifle and mortar fire: ordnance passes through the envelope without causing critical helium loss (see page 6). In all instances of light armament fire evaluated under both test and live conditions, the vehicle was able to complete its mission and return to base.

**Interdiction:** able to land on water or rough terrain, independent of any support, the SkyCat offers a total patrol vehicle with a direct interdiction capability.

The SkyCat provides the ideal vehicle for emergency operations, disaster relief and humanitarian aid. With only minor interior modifications, the same vehicle can be deployed interchangeably in the full range of relief missions, from combatting natural disasters to the control of bush and forest wildfires.

**Direct into disaster area:** with its ability to land on unprepared terrain, water included, the SkyCat can land directly in the affected zone in any natural disaster, whether caused by flood or famine, earthquake or hurricane.

**Direct to those in need:** food, medicine, shelter and equipment can be taken directly to those in need, where they need it, without loss through damage or pilfering, and preventing the victims from leaving their land in search of food and help.

**Low cost:** the SkyCat-20 can do the job of eight MI8 helicopters at 10% of the effective cost. For regular supply operations,

it out-performs aircraft such as the twin Otter and the Buffalo by a factor of 3 to 4. The larger SkyCat-220 can deliver its cargo at a lower cost than heavy-lift aircraft (e.g. the C-130 transporter) and, at under \$0.20 per ton/km, is cost-comparable with over-land bush trucks – while, of course, carrying more payload, faster and with far less infrastructural and environmental damage.

**Endorsement:** the unique advantages of the SkyCat vehicle, and the SkyCat-220 in particular, have been endorsed by the U.N. World Food Programme, the world's largest aid logistics agency, as the optimum relief vehicle in their theatres of operation.





## *FireCat: Fire-fighting*

The SkyCat-20 and SkyCat-220 FireCats offer a uniquely flexible, rapid and high-volume solution to the problem of fighting wildfires in bush, forest, farm estates and residential areas. Key features include:

**Capacity and efficiency:** the SkyCat-20 FireCat is able to lift, transport and drop 20 tons of water directly on a fire (220 tons for SkyCat-220), dropping its load at slower speed and therefore more efficiently, as well as more cost-effectively, than any conventional fire-fighting air vehicle. Water ballast tanks already installed to assist long-term anchorage can take 60% of the volume, the balance being supplied from inflatable tanks readily installed and removed in the payload module.

**Water scoup ability:** with its ability to land on water, the FireCat can take water on board direct from the sea, lakes and reservoirs, even in shallow water depth, and deliver this direct to the scene of the fire.



With its spacious cabin, gentle cruising speed and autonomous all-terrain operation, the SkyCruiser offers a uniquely attractive tourist vehicle. In particular:

**Eco-tourism:** the vehicle's low fuel burn and independence of any need for invasive ground infrastructure makes the SkyCruiser ideally suited to eco-tourism, a fast-growing market with strong foreign currency benefits, and to operations deep into environmentally-sensitive areas.

**Capacity:** the SkyCat-20 can carry up to 120 passengers in economy-class seating, or 70 passengers in spacious first-class accommodation.

**Low cost:** direct operating costs of less than \$1,000/hr equate to \$10 per economy-class passenger per hour, or some \$0.07 per passenger/km. Even on an all-in cost basis, the SkyCruiser could be operated at a profit by charging passengers \$35 per hour, or \$0.26 per km – clearly well below the premium levels that could be charged.

**The experience:** touring in a SkyCruiser would be more than merely a means of transport to a destination but a travel experience in its own right. Able to land right alongside a cruise liner, for instance, the SkyCruiser could take passengers direct to destinations deep inland or operate flexibly between islands and the mainland. Further, its ability to hover above important natural sites and linger over breathtaking views, to observe silently and non-intrusively the wildlife of the region, make for a novel and environmentally-sympathetic addition to the tourist experience.

**Competitive advantage:** in an increasingly competitive international market, the SkyCat offers a uniquely powerful attraction that will place the first-adopting nation or tourist operator in the forefront of the world's eyes as leaders in 21st-century eco-sensitive tourism.



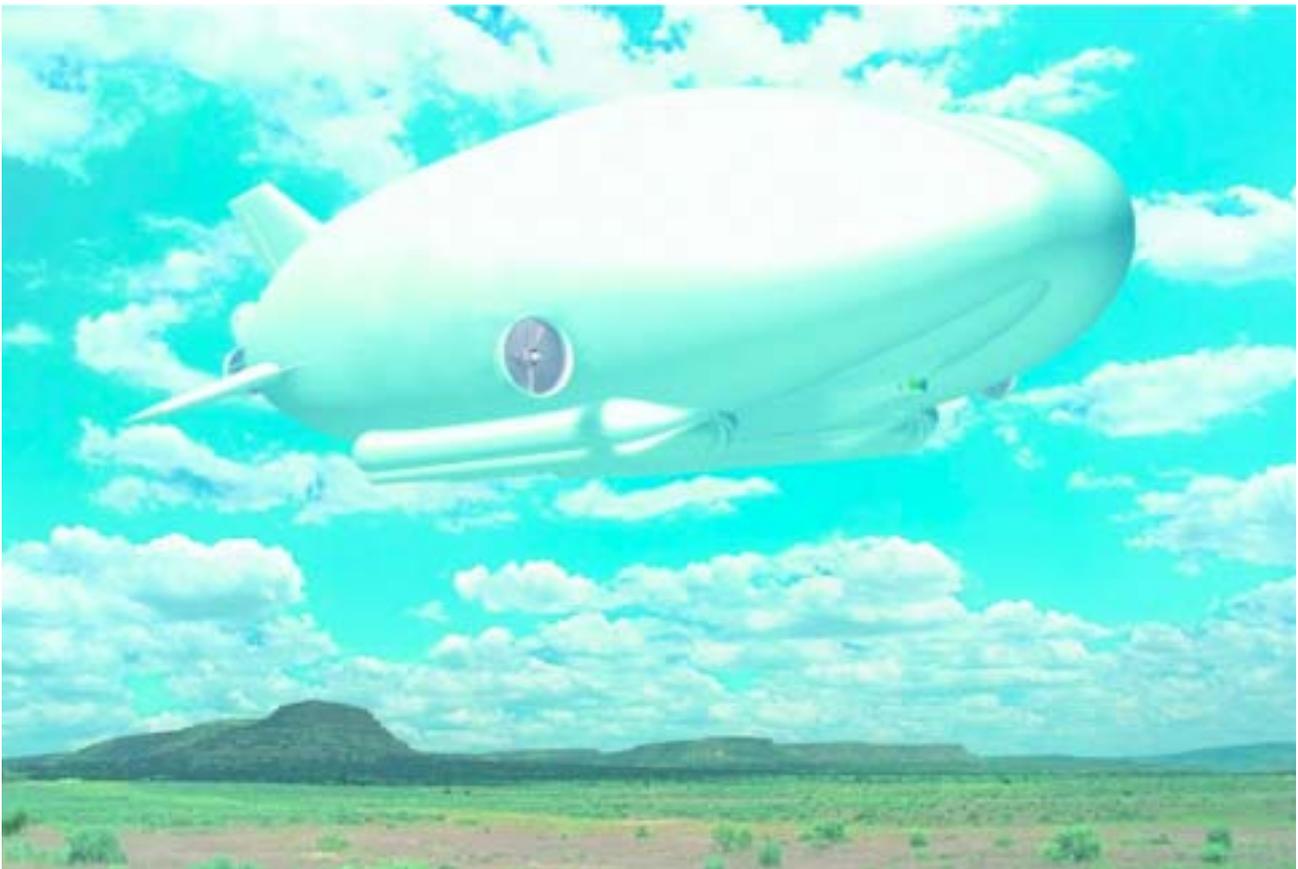
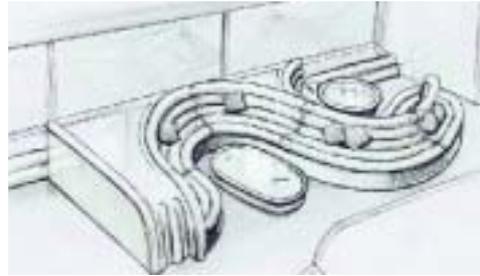


## *SkyShuttle: Mass Passenger Transport*

The 220-ton-lift SkyShuttle offers a highly economical mass passenger transport vehicle for short-haul routes, carrying up to 900 passengers at a cost per passenger/km of under 10 US cents.

**Spacious cabin areas:** a 70m-long cabin would accommodate 660 passengers in a typical F/B/Y mix, with generous allowance for circulation. Further, there is ample height for an upper floor, providing ideal space for recreation, dining or sleeping.

**Low costs:** the capital cost per seat of the SkyShuttle is \$120,000, compared with \$365-380,000 for the largest Airbus and Boeing passenger aircraft. When combined with very low direct operating costs, this gives a cost per passenger as low as \$9 per 100km. And, with the space available, economy class can be luxury travel.





With spacious all-1st-Class seating, the SkyCat-220 could carry 420 passengers on the lower deck and 42 cars on the upper deck. Key points include:

**Fast loading / unloading:** ramps at each end provide rapid roll-on / roll-off operation for cars.

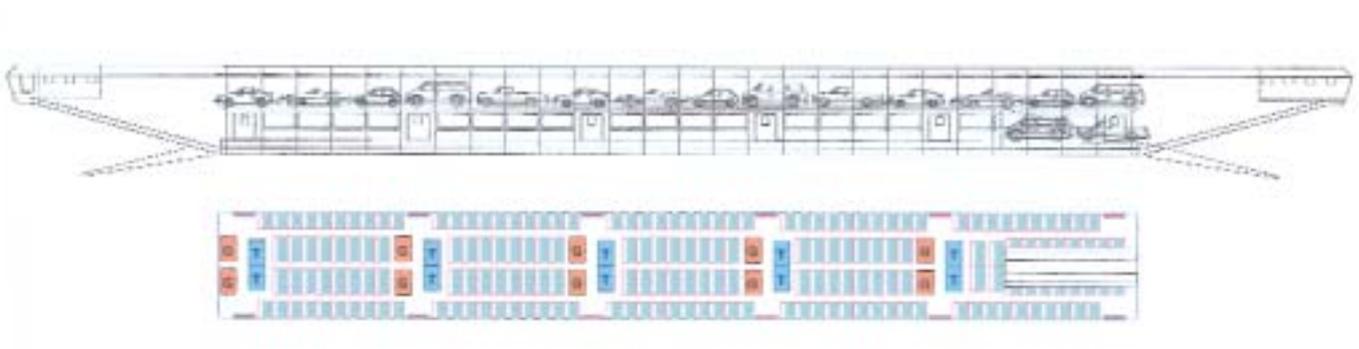
**Point-to-point service:** potentially replaces existing sea ferry services by virtue of ability to operate point-to-point – e.g. from the new Athens airport direct to the Aegean islands, as well as the many current ferry routes, or even on overland routes in countries with poor road infrastructure.

**Low cost:** allowing for increased turn-round time for loading, securing and unloading vehicles, and assuming optimum all-1st-Class

seating with 80% load factor, a profitable operation could be run at a price tariff of \$15 per 100km per pedestrian passenger and \$25 per 100km per car passenger (car included).

**Sample routes:** assuming 20% F and 80% Y Class for a ferry service, and allowing First Class passengers to take their cars (at 3 pax per car average), the following prices would yield the operator a profit over these sample routes:

	<i>First Class (with car)</i>	<i>Economy</i>
<b>New Athens airport</b> – Aegean Is.	\$40	\$22
<b>Mexico City</b> – Acapulco	\$46	\$27





## SkyYacht: Executive SkyCat

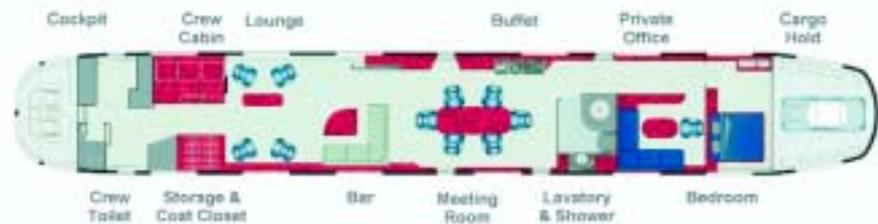
The SkyCat-20 SkyYacht offers a strikingly original as well as uniquely versatile vehicle to fulfil a function as a luxury Executive aircraft, both for the personal use of the owner and for the transport and entertainment of guests, invited dignitaries and business associates.

**Spacious cabin:** the large, light cabin area can be customised to any luxury design requirement and is capable of offering extensive VIP lounge, hospitality and meeting areas, as well as state-room and study quarters. The rear can be adapted as a garage bay with ramp to carry private limousines.

**Business affairs:** while many major international cities will lie within convenient flight range, the unique ability of the SkyCat to land virtually anywhere without need of air strips or pre-positioned ground crews will enable the owner to pay visits to business interests lying in far-flung regions – and to arrive with spectacular effect.

**Leisure and pleasure:** able to take off and land vertically, the SkyYacht lends itself to trips (e.g.) from the city or the yacht to the owner's private estates or to vacation resorts, carrying family, friends, colleagues and visitors in conditions of high luxury.

**Communications:** with the space and weight available, the SkyYacht can also operate as a complete airborne office, carrying a communications suite to enable the owner to remain in full contact with his staff and business interests.



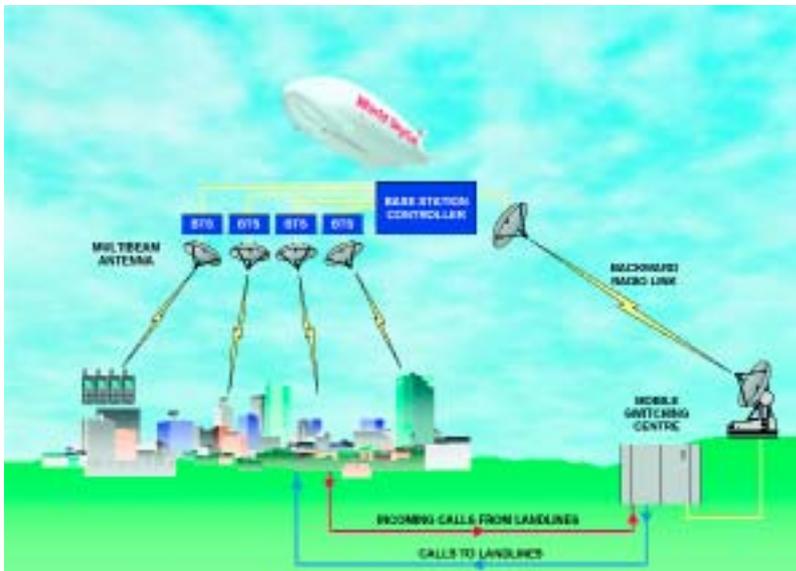
A SkyCat-20, operating on station at 10,000 feet and equipped with advanced digital beam-forming antenna equipment, can provide a rapidly-deployed and highly cost-effective low-altitude telecommunications platform for broadband, broadcast and 3G mobile wireless networks.

**New network roll-outs:** the SkyCom Low Altitude Platform (LAP) is the ideal telecommunications solution in regions where a rapid roll-out is required at low cost, particularly where terrestrial towers encounter environmental objections or are too costly for low-population-density areas.

**Existing network extension:** for existing telecom networks, the SkyCom system can be deployed to provide rapid-reaction emergency and maintenance cover or additional communication coverage, e.g. at mass sporting events.

**Capacity:** one SkyCom system comprises 1.3 SkyCat platforms so as to maintain round-the-clock cover and is designed to offer:

- 500+ sq. km. footprint for high-density urban areas, with cell sizes as small as 100m x 100m, or footprint up to 10,000 sq. km. for lower-density areas
- target of 1,600 cells per system, providing 8,000 channels, equivalent to replacing 400 terrestrial towers
- 99.98% operability in severe weather conditions (e.g. UK)
- long-endurance duty cycles (days, not hours)
- capital and operating costs under 20% of terrestrial tower alternative
- high return on capital either as platform operator only or as full telecoms service provider
- fast-into-market deployment





## SkyScreen: Advertising

With its unique payload capacity, the SkyCat-20 can be fitted with large display screens and offer a revolutionary new, high-impact approach to the traditional role of airships in outdoor advertising as a truly unique, massive flying billboard.

**Screens:** the SkyScreen will carry two state-of-the-art LED display screens, each 85ft x 45ft. These screens will be capable of full motion pictures, visible both day and night at brightness levels well in excess of sports stadia / motorway standards.

**Corporate hospitality:** the spacious cabin is capable of carrying 40-50 passengers or corporate guests in conditions of great comfort and luxury – e.g. with a piano sky-bar, observation gallery, etc..

**Visual impact:** longer than a Boeing 747 and over 5 times the volume of the Goodyear blimp, the SkyScreen flying at 1,000 ft over a city or a sports event will create an unprecedented visual impact and generate commensurate advertising and public relations punch.

**Flexibility:** able to land and take-off from virtually any terrain enables the vehicle to operate from the client's own premises, from harbours and lakes and waterfronts as well as show-grounds, race-tracks and any reasonably large open areas.



**Global capability:** the SkyScreen can fly anywhere in the world under its own power, making it ideal for a global marketing tour to break out a new brand or promote a new international corporate identity.

**Self-liquidating cost:** surplus time on the screens can be sold commercially to non-competitive advertisers at rates that will enable the main sponsor not merely to recover the cost of branding the hull but even make a net profit on the operation.



## SkyFreight: Heavy-lift Cargo



The ideal vehicle for the heavy-lift freight role is the SkyCat-220. With a payload capability of 220 tons in STOL mode (short take-off and landing), this offers a uniquely low-cost, flexible addition to the transportation and logistical resources of many key regions of the world:

**Inland freight:** with a standard operating range of some 6,000 km, the SkyCat-220 is well within its limits for the transport (for instance) of fresh produce from deep within the territories direct to port or terminal.

**Export freight:** for those products where air freight is too costly and sea transport too slow – perishable fresh produce, for instance – the SkyCat offers a cost-effective alternative, enabling such produce to be delivered direct from source to market.

**Low cost:** at under \$0.20 per ton/km, and given the vehicle's relatively high speed (155 kph), the SkyCat-220 becomes directly cost-competitive with trucks and other forms of overland freight.

**Distribution network savings:** as the U N World Food Programme attest, the SkyCat-220 can enable major savings to be made by eliminating intermediate warehousing and

distribution centres – not just in terms of the facilities themselves and the costs and losses associated with double-handling but also the hidden infrastructural costs of road transport systems.

**Future developments:** we are working to develop a controlled-atmosphere (CA) version of the SkyCat-220 which would incorporate CA technology within the payload module to maintain total freshness of produce and thereby compete with air freight alternatives not just on cost but also on delivery freshness.





## SkyLine: Pipeline Transport

Able to operate fully autonomously in the remotest regions of the world, the mega-lift SkyCat-1000 offers a uniquely cost-effective and flexible heavy equipment transporter for the oil and gas industry, and specifically for the delivery of pipeline direct to trench site.

**Large payload module:** with a payload module of 400ft (123m) in length, the 160-ft lengths of pipeline produced at the factory need not be cut for transport and welded back together on site: indeed, two lengths could be welded at source and carried as a single 320-ft section. A total of 12 such lengths could be carried by the SkyLine vehicle in a single trip, equivalent to 1.2km of pipeline.

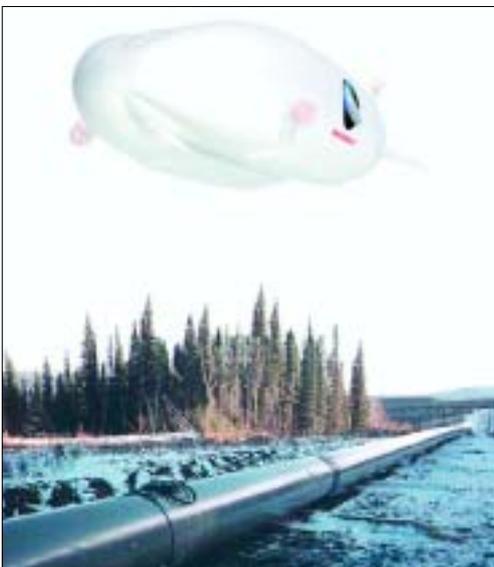
**Stacking and unloading:** the 320-ft lengths would be stacked in 2 tiers, thereby greatly facilitating loading and unloading. The SkyCat could even unload the pipeline directly alongside the trench by taxiing on its hover-cushions and discharging the pipe behind



it by means of a system of ramp rollers. This would offer significant savings on handling and damage.

**Major cost savings:** initial evaluation of a sample route (Lake Baikal, Russia, -Beijing) indicates that fleet of 3 SkyCat-1000s could transport 4km of pipeline a day at a cost of some \$115,000 per km and complete the 3,000km pipeline route in just 2 years. In addition to the direct cost savings, significant cost benefits accrue from enabling the pipeline to come on stream far earlier and, with it, the revenue flows.

**Other key applications:** these include the transportation of crews and accommodation units as well as heavy equipment in units (such as compressors) – and particularly in regions otherwise accessible only in certain seasons of the year.



## SkyGas: Natural Gas Transport



A SkyCat-1500, an extended variant of the largest vehicle in the family and designed to carry a payload of 1,500 tons over long distances, offers a profitable and environmentally benevolent means of transporting natural gas in gaseous form direct from well-head to user terminal.

**Volumes:** the SkyCat-1500 SkyGas will lift some 2.5 million cubic metres of natural gas (NG) in gaseous form at a time straight from the well-head and discharge it directly into the end-user delivery flange.

**Payload provides the lift:** apart from 10% helium to support the return leg, all the lift is provided by the cargo itself on the outward leg and aerodynamically on the return.

**Safety:** the flammability of NG lies within a narrow band and, in the event of a hull breach, the gas would rise upwards and disperse – considered by industry experts as significantly less dangerous than a LNG carrier suffering a containment loss.

**Low cost:** SkyGas can transport NG at a cost of approx. \$1.00 per 1,000 cubic feet over an A-B distance of 1,000km and approx. \$3.50 per 1,000 cu. ft. over 3,000km.

**Key opportunities:** the SkyGas system can offer overriding cost benefits in those fields where gas volumes are too small or the political risk too high to warrant pipeline/LNG investment or where the fields are remote or not readily accessible.

**Eliminates liquefaction:** the system avoids any need for liquefaction, LNG transport and final re-gasification, with all the intensive capital costs and safety risks involved.

**Low risk:** by definition a mobile asset, the SkyGas system avoids the risks associated with large-scale fixed assets in politically unstable regions of the world.

**Environmental benefits:** capture of gas that is otherwise flared off has a major and directly quantifiable benefit to the environment.





## Comparative Costs

The following suggests comparative costs for the SkyCat-20 and SkyCat-220 against aircraft of comparable size or payload (figures indicative only; costs per hour based on typical short-term charter price):

<b>SkyCat-20</b>	Payload (tons)	COST	
		per hour (\$)	per ton/hr (\$)
MI8 helicopter	2.5	3,750	1,500
Twin Otter	3.0	825	275
Shorts 360	4.0	950	238
Buffalo	7.5	2,350	313
C-130	18.0	3,950	219
<b>SkyCat-20</b>	<b>20.0</b>	<b>3,850</b>	<b>192</b>

### **SkyCat-220**

Il-76	43.0	3,900	91
Boeing 747-200 (post-1990)	95.0	7,450	78
Boeing 747-400	110.0	9,300	85
Antonov 124	120.0	6,750	56
<b>SkyCat-220 Payload</b>	<b>220.0</b>	<b>6,350</b>	<b>29</b>

The basic capital, leasing and operating costs of the SkyCat-20 and SkyCat-220 are as follows. The figures show a range that relates to the specific operational role, including the requirement for on-board equipment and interior fit.

	SkyCat-20	SkyCat-220
<b>Gross Payload:</b>	20,000 Kg	220,000 Kg
<b>Cargo Volume:</b>	140 cu.m.	2,400 cu.m.
<b>Range:</b>	2,000 n. miles	3,225 n.miles
<b>Cruise Speed:</b>	75 knots (140 kph)	85 knots (155 kph)
<b>Vehicle basic price:</b>	\$25m – \$28m	\$80m – \$92m

### Direct Operating Costs:

Based on flight hours p.a.:	3,500 hrs	4,500 hrs
– per annum	\$3,485,000	\$6,200,000
– per flight hour	\$ 995	\$1,380
– per ton/km	\$0.35	\$0.04

### Lease costs (long-term basis):

– per annum	\$10m – \$11.2m	\$22.4 m – \$25.7m
– per month	\$0.8m – \$0.9m	\$1.8m - \$2.1m

### Total Costs:

– per annum	\$13.5m – \$14.7m	\$28.6m – \$31.9m
– per flight hour	\$3,850 – \$4,195	\$6,350 – \$7,090
– per ton/km	\$1.38 – \$1.50	\$0.19 – \$0.21

### NOTES:

1. All figures subject to confirmation of specific operational role
2. DOC include fuel, consumables, crew, time-dependent maintenance – i.e. everything a user would have to pay over and above the dry lease
3. Lease costs include cost of finance, insurance on the hull and ground equipment, annual maintenance and a nominal figure for overhead and management.



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## *Finance Options*

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World SkyCat Ltd. is able to offer SkyCat air vehicles under a range of financial options to suit the user's requirements. The main options are:

- **Wet lease:** Full ACMI turnkey service, to include provision of the SkyCat vehicle, insurance, maintenance, crewing, fuelling and ground support

Lease contract for agreed period with option to renew, at a fixed monthly charge for a minimum annual utilisation; additional flight hours charged at cost plus a handling fee

- **Dry lease:** User leases vehicle for an agreed period

User fully operates vehicle, including providing insurance, maintenance and crewing

- **Purchase:** User purchases the vehicle direct through World SkyCat Ltd. against the standard purchase contract

Payment either by stage payments during construction or on extended credit terms which World SkyCat Ltd. can offer

User can either operate the vehicle themselves or contract with World SkyCat Ltd. to operate on their behalf (as below)

- **Operating contract:** World SkyCat Ltd. is established as an airship operating company and, in association with ATG and Airship Management Services Inc., USA, is able to offer a full day-to-day operating service, including crewing, insurance and maintenance.

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## Contacts

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The SkyCat is a truly revolutionary new air vehicle, whose future is ultimately only limited by the imagination. This Introduction describes just some of the immediate applications for which the SkyCat family can offer the ideal solution.

We should be pleased to discuss how the SkyCat air vehicles may be made of service to you.

*Please contact*

**Michael Stewart**

Managing Director

World SkyCat Ltd.

Wytham Abbey,

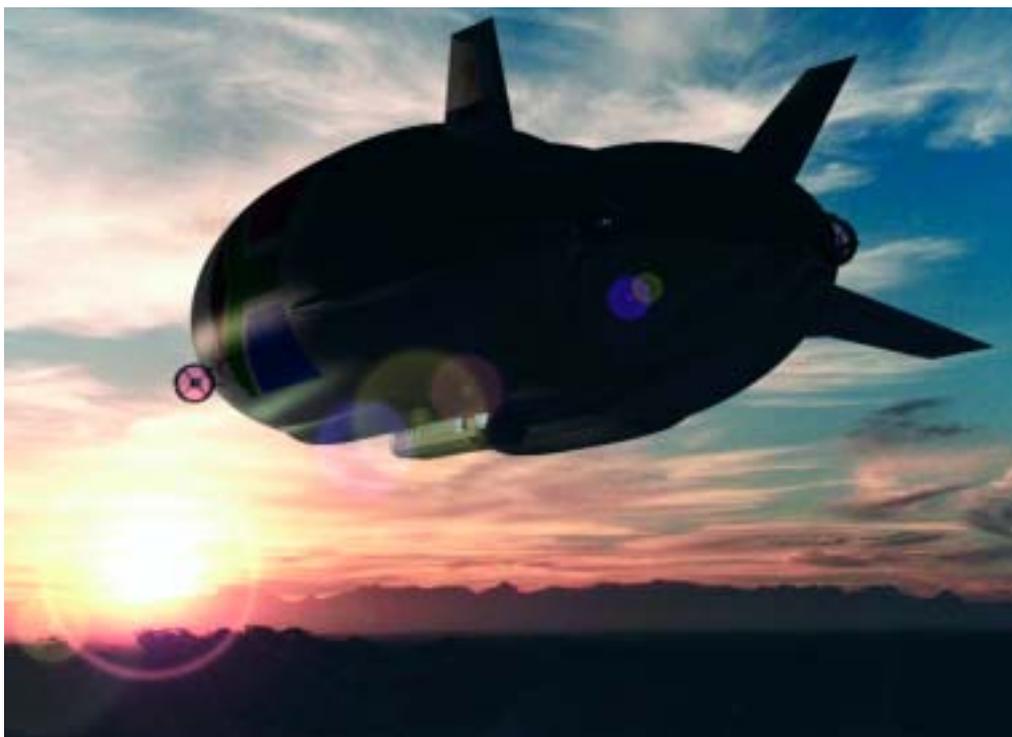
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## Appendix: SkyCat-20 "Carpet plots"

The following charts relate range vs payload and altitude vs. range for the SkyCat-20 to provide base operating data for any mission scenario.

