

Adopting a US style no-frills strategy has been the fastest growing development in Europe over the past three years. Major European carriers have the reputation for the globe's highest air transport costs, but do the low-cost carriers have a large enough cost advantage that they can maintain?

Are Europe's no-frills carriers cost-efficient?

The success of "no-frills" airlines in Europe in the past three years has attracted much attention.

The rapid expansion and low fares charged by the most prominent players suggest more airlines could emerge. This will only be possible if no-frills carriers can achieve and maintain a sizeable difference in cost per seat-mile over the major Europeans. So, how much lower can the cost base of European no-frills airlines be compared to major scheduled operators?

No-frills explosion

The majority of European no-frills airlines have developed in the United Kingdom. They have all based their strategies on successful ones implemented by Southwest and Valujet. Valujet, which started operations in 1993, managed to achieve a cost standard of 7.0 cents per available seat-mile (ASM) and the second highest yield in the US. This gave it a break-even load factor of just 45%.

One of the first and largest European no-frills carriers is Irish airline Ryanair, which operates a route network from Ireland and London Stansted with a fleet of 20 737s.

UK airline easyJet has been so successful it has recently enlarged its fleet with an order for 12 737-300s and 15 737-700s. Virgin Express acquired a majority stake of Belgian inclusive-tour carrier Eurobelgian airlines and now

operates a low-cost operation from Brussels.

A new entrant, BA subsidiary Go, operates just seven 737-300s. Its recent recruitment campaign for aircraft delivery managers and engineers suggests Go has bigger plans.

Simple strategies

No-frills have established costs allowing them to charge fares that embarrass major airlines. The key points of Valujet's success were ticketless travel, direct contact with the customer and a simple operation.

The low ASM costs these young airlines can maintain will determine the fares they can charge. An initial study of Europe's major carriers' fares, operations and restraints certainly indicates there is plenty of scope for cost reductions.

Europe's scheduled operators have inherently high cost bases, incurred from years of complicated operations to attract high fare paying business travellers. Major European operators also have high costs because of strong labour unions and large infrastructures for maintenance, passenger service, catering, interlining, yield management and ticket distribution. Major European carriers suffer severe congestion, one of several factors outside their control.

On the other hand, there are several costs, such as increased aircraft lease rental rates, where new no-frills entrants

have a disadvantage. In the table on page 20, we analyse the cost structure of hypothetical no-frills and major European airlines and contrast this with a US no-frills operation. This provides an indication of how efficient European low-cost airlines have become, and where they may still have potential for further improvement.

Congestion

Europe's main problem is airport and airspace congestion. Airport congestion often leads to slot delays (departure delays due to airspace congestion) on routes between the busiest airports. Airlines are forced to factor these into their timetables, lowering aircraft utilisation as well as flight crew and flight attendant productivity. Slot delays can be 20 minutes or more.

Congestion at airports varies. The use of secondary airports is an obvious method for improving operational efficiency, but no European airline can completely avoid airport congestion.

Ryanair finds it suffers slot delays of 15-20 minutes over most of its route network, but the problem would be more severe if it flew from London Heathrow. Tim Jeans, commercial director at Ryanair, explains that risk of slot delay means the network and aircraft have to be carefully scheduled. "We rarely schedule flights back-to-back. That is, we never go from Stansted to Pisa and back





Europe's no-frills airlines have emulated strategies successfully used by airlines such as Southwest and Valujet.

to Stansted. Instead, we fly on from Pisa to Ireland. This way delays during the day are less likely to accumulate, since Dublin suffers less congestion."

Congestion also causes arrival delays and longer taxi times. "We fly to Beauvais and Charleroi, instead of Paris Charles De Gaulle and Brussels Zaventem, with very few arrival delays," explains Jeans. "Despite Beauvais being 35 miles north of Paris, the passengers do not object. Passengers are provided with a coach ride into Paris, and we have more traffic than Aer Lingus to the city. Beauvais also has a short taxi time. The Stansted-Beauvais route has a seven minute taxi at Stansted and one or two minutes at Beauvais. This compares to a possible 20 minute taxi at Heathrow and further 15 minute taxi at Charles De Gaulle." This example shows how the average taxi time between sectors on a European network can vary by as much as 20-25 minutes.

The hypothetical airlines listed in the table illustrate differences in the slot delay, flight delay and taxi times, given a 737-300 as standard equipment. Flight plan time for a no-frills carrier on the 491nm Luton-Geneva-Luton route is 75 minutes (averaged over both directions). This compares with 70 minutes for the 436nm Heathrow-Geneva-Heathrow route, which might be operated by a major airline.

The arrival delay (stacking) times will add another average of five minutes to the Luton route and 10 to the Heathrow

route. This will take actual flight time to 80 minutes each, the slightly longer Luton route gaining from less congestion.

The Luton route will average a nine minute taxi time, while 20 minutes are to be expected on the Heathrow route. The average block time for these routes will then be 109 minutes for Luton-Geneva-Luton and 120 minutes for Heathrow-Geneva-Heathrow.

As a contrast, unhindered US no-frills carriers are able to achieve shorter block times than their European counterparts on similar route lengths. The 424nm Dallas Love Field-New Orleans has a flight plan time of 67 minutes. Slot delays in many parts of the US are minimal and an airline like Southwest might experience a two minute penalty over its route network. Holding delay in the US southwest might add another minute and taxi time is about nine minutes. This takes total used block time to 79 minutes, 30 minutes less than a European no-frills carrier operating a route only 67nm longer.

Aircraft productivity

Turn times provide further gains for no-frills airlines. These are in the region of 20-25 minutes in Europe and the US, while major European airlines have turn times of at least 45 minutes for the same aircraft. Catering, cleaning and interlining are the major elements of this extra turn time.

No-frills airlines have single-class, higher density seat configurations. No-frills airlines both sides of the Atlantic are likely to have close to 148 seats in a 737-300. There is some variation between major European carriers but an average of 135 seats is common, with some airlines that are successful in gaining business traffic having even fewer seats.

The number of working hours available to a carrier per day depends largely on the times which are considered acceptable by their passengers. A no-frills carrier in the US might be able to start operations at 7am and finish at 10pm. On average, European airlines' working day may start half an hour later than the US, and a European no-frills carrier finishes at an average time of 9pm. Even this is about an hour longer than a major carrier might be able to achieve. "A no-frills carrier might get the opportunity to achieve one more sector per day in Europe than a major carrier," explains Jeans. "This is due to a combination of a longer working day and shorter taxi and turnaround times."

Our hypothetical European no-frills airline would achieve an average of just over six sectors per day. This compares to about four and a half per day for the major operator. By comparison, the US airline would achieve a far higher number of just over nine sectors in a working day.

Despite having an average sector time of less than an hour across its network, The hypothetical US no-frills achieves



Aircraft lease costs provide the second largest cost difference between no-frills and major airlines. Low cost operators can achieve 50% higher productivity with their fleets.

3,555 flight hours (actual flight time not including in-flight delays). This compares with Southwest's 3,000 flight hours achieved annually. The European counterpart only achieves 2,781 flight hours, although this is considerably higher than the major carrier's achievement of 2,091 flight hours.

The US no-frills operator generates almost 200 million ASMs per year. The European counterpart is only able to generate 150 million ASMs annually, but this is still 60 million more than the European major.

The European no-frills airline takes advantage of a simplified operation, but still pays a penalty for congestion, compared to its US counterpart.

Much higher ASMs are generated by the no-frills carriers. These aircraft productivities are the key to almost all of the following cost differences.

Fuel and maintenance

Longer flight and block times in Europe also means the fuel burn for similar sectors are higher than the US. The European no-frills operator pays approximately five cents per gallon more for fuel than a major.

The number of ways in which an airline can organise its maintenance makes cost estimations difficult. What is

certain, however, is that low-cost airlines will try to organise their maintenance in the simplest possible way and will subcontract most of the work. Part of ValuJet's simplicity strategy was to subcontract maintenance. This helped it achieve an overall labour cost of 2.0 cents per ASM compared to a US industry average of 3.7 cents.

All elements of maintenance except line maintenance have been accounted for as being performed by a third-party, at industry standard third-party rates for a mature aircraft. Line maintenance is assumed to require one man-hour per flight hour at a cost of \$50 per hour. The European no-frill airline pays a higher rate for line replaceable units and so its final cost per flight hour is the highest.

A major European carrier is more likely to have a large portion of its maintenance performed in-house, particularly airframe checks. This is likely to increase costs.

One maintenance related cost not included in the table is the cost of employing technical directors and maintenance planners. A low-cost airline, with a streamlined operation, is likely to employ the legal minimum requirement of technical people to manage its fleet. Larger airlines, including major scheduled operators, which have their own in-house facilities, will have further overheads.

Crew

The common thought is that no-frills airlines have lower basic pilot salaries, worse working conditions and smaller allowances than larger operators. In fact, Southwest Airlines has some of the highest salary scales for pilots in the US. However other US no-frills airlines do not pay such high salaries. The salaries in the table reflect what an average low-cost airline might pay. Pilots in the US are generally paid higher salaries than their European counterparts, although productivity is higher. The additional remuneration costs of allowances/per diems, insurance, transport, subsistence and training are accounted for by a factor of 20% of salary for the US airline, and 25% for the Europeans.

The ASM cost is determined by the assumption that a US airline would achieve a pilot annual productivity of 875 flight hours. The Europeans are only likely to achieve 750 flight hours in the case of a low-cost airline and pilots in a major carrier may only achieve 650 flight hours per year.

Flight attendant salaries are slightly higher for the Europeans. A factor of 10% has been applied to basic salary for training, allowances and subsistence. Southwest Airlines achieves about 750 flight hours per year compared to 800

COMPARISON OF SHORT-HAUL OPERATION ASM OPERATING COSTS

	US no-frills		European no-frills		European major	
Aircraft seats	148		148		135	
City pair	Dallas-New Orleans		Luton-Geneva		Heathrow-Geneva	
Sector length (nm)	424		491		436	
ASMs per flight	62,752		72,668		58,860	
RPMs @ 65% load factor	40,789		47,234		38,259	
Slot delay (minutes)	2		20		20	
Plan flight time (minutes)	67		75		70	
Holding delay (minutes)	1		5		10	
Actual flight time (minutes)	68		80		80	
Taxi time (minutes)	9		9		20	
Block time (minutes)	77		89		100	
Total used time (minutes)	79		109		120	
Turn time (minutes)	20		25		45	
Available hours per day	15:00		13:30		12:30	
Average sectors per day	9.09		6.04		4.55	
Sectors per year	3,136		2,085		1,568	
Flight hours per year	3,555		2,781		2,091	
ASMs per year	196,813,091		151,545,318		92,303,182	
Aircraft costs	\$	cents/ASM	\$	cents/ASM	\$	cents/ASM
Fuel burn	611	0.97	760	1.05	732	1.24
Maintenance	804	1.28	1,062	1.46	1,010	1.72
Flight crew	244	0.39	269	0.37	362	0.61
Cabin crew	166	0.26	205	0.28	304	0.52
Catering	296	0.47	370	0.51	1,553	2.64
Landing charges	182	0.29	755	1.04	663	1.13
Navigation charges	335	0.53	263	0.36	297	0.50
Aircraft lease	842	1.34	1,439	1.98	1,683	2.86
Aircraft insurance	16	0.03	24	0.03	32	0.05
Total trip cost	3,496	5.57	5,146	7.08	6,636	11.27
Total trip cost/passenger at 65% load factor	36		53		76	
Total cost per RPM at 65% load factor		8.57		10.89		17.34
Passenger charges						
Airport taxes	3		15		16	
Passenger ticket distribution	5		6		22	
Total passenger cost	44		75		114	
Total cost per RPM at 65% load factor		10.46		15.20		26.04

flight hours for a European no-frills carrier. Both no-frills carriers are likely to have a crew complement of four. A European major will have a larger crew of five as well having a lower crew productivity of 700 flight hours.

Catering

Low-cost and no-frills carriers generally have simple in-flight services that generate costs of no more than \$2

per passenger. The cost for a European airline in this category is likely to be higher, and so an estimate of \$2.50 per passenger is representative. Some no-frills have a zero catering cost. In contrast, a major airline, because of business class and the supply of free alcoholic drinks to all passengers, means a passenger cost of \$11.50 is common. It is the dramatic reduction of this cost that has a direct impact on the fares a no-frills operator can charge.

Airports and airspace

Airport and airspace user charges are another target for cost savings by low-cost operators. In fact, these costs are so high in Europe that they are responsible for the biggest difference between North American and European airlines.

Airport charges in Europe are not only higher than the US, but European airports also have many different cost elements. Basic landing charges, usually



In-flight catering is where the costs of no-frills and major scheduled operators differ the most. Many no-frills operators only provide small snack on board and charge passengers at cost.

based on aircraft noise category and maximum take-off weight, are supplemented by terminal navaid, aircraft parking and passenger handling fees.

The landing fees charged by US airports vary. Dallas Love Field has low charges, while New Orleans charges on a par with some of the cheaper European airports. The average landing fee for a 737-300 on a Dallas Love Field-New Orleans round trip is \$182, which is higher than many other short distance city-pairs on US no-frills networks.

Geneva is one European airport with competitive landing fees, and charges about \$300 for a 737-300, while the terminal navaid charge is about \$254. The total airport charges for the three routes are shown in the table.

As well as aircraft related landing and terminal navaid charges, European airports also charge airlines passenger taxes, which are passed straight onto the ticket price. These are examined below.

Navigation charges, now charged in the US, are similar for a 737-300 flying the same route distance on both continents. In fact, in the examples studied here, the US route incurs a higher

cost. The no-frills airline in Europe therefore has the lowest seat-mile charge.

Aircraft

Aircraft ownership is the highest aircraft related cost. Airlines have to strike a balance between lease or depreciation rates and cash operating costs. Modern aircraft are efficient, but have high lease charges. Airlines also try to maximise utilisation, but the schedules can then be a detriment to passenger appeal.

Lease and depreciation methods are areas for differences. Others include the age of the airline's aircraft and the negotiated purchase price. Lease rates for 737-300s are now said to be under pressure, since lessors are taking delivery of 737-700s and not placing them.

A 737-300 can now be leased for about \$250,000. This is because 737-700s are being offered for as little as \$350,000 per month. An established airline with a strong credit could probably agree a monthly lease rental for a 737-300 of \$220,000. This rate has been used to estimate the US and European major airlines' cost base. The higher rental of \$250,000 is probably close to what a young no-frills airline in Europe might have to pay.

Insurance costs should be included with lease rentals and a rate of 0.2% of a

hull value of \$25 million has been used. Again, hull values and rates could be higher.

Based on the annual seat-mile productivities, these charges expose the advantage a low-cost operator in the US can achieve.

Indirect costs

Airlines have sizeable costs related to passenger marketing, yield management, ticket distribution and ground services at airports.

These can either be incurred through an airline's own in-house capabilities or by using third-party suppliers. An airline with a streamlined operation will have a simple passenger handling and ticket marketing system.

Valujet found it could make savings when it pioneered ticketless travel. This was done to circumvent the computer reservation system (CRS) charges it would have otherwise had to pay if it had not made itself directly available to the customer. Ticketless travel is possible since all the ticket information is stored in the reservation computer. The absence of a CRS resulted in an instant saving of \$2.75 per fare. Valujet extended this simplicity by not issuing boarding cards or allocating seats to passengers checking in. This further minimised airport ground infrastructure and staff requirements.

No-frills carriers use secondary and sometimes remote airports which are less congested than primary airfields. This saves time and improves aircraft productivity. Low fares means passengers rarely object.

In 1994 Valujet achieved a distribution cost of about \$8 per passenger, which compares with over \$20 for the US majors. This included \$11 for travel agency commissions which Valujet was avoiding by ticketless travel. The indications that this was working resulted in Delta capping its agency commissions and Sabre reducing its CRS charge from \$2.75 to \$1.60. Valujet was also making savings from reductions in advertising, reservations, and ticket production costs.

UK airline easyJet adopted virtually the same principle as Valujet and developed a telephone and credit card booking system. Passengers book tickets on the telephone and simply provide identification at check-in. Other European no-frills airlines should be able to achieve similar reductions in passenger distribution costs.

Ticketless travel booking systems also reduce the costs of revenue accounting and often rely on credit cards to ensure immediate payment.

Airport taxes are a further burden to European carriers. These are low or even zero in the US. The example US route in the table results in an airport tax of \$3 per passenger, while the two European routes have taxes of \$15 or \$16.

Ground handling charges have not been estimated in the table and in many cases will depend on an airline's infrastructure.

Summary

Although distribution costs have dropped for all airlines from the levels achieved in 1994, the savings in the US show the potential for European airlines.

Catering generates by far the largest difference between the European airlines, with the no-frills carrier gaining by 2.13 cents.

The next largest difference is the aircraft lease and insurance charges, where the European no-frills airline has a 0.90 cent advantage over its major counterpart.

Aircraft lease cost is also the biggest opportunity for a European no-frills airline to match the price of US low-cost carriers. The US airline still has a 0.64 cent advantage. An equal lease rate, possible as the European airlines gain in credit rating, would reduce the US airline's advantage to 0.40 cents. The European no-frills operator still has to contend with three less sectors per day because of congestion constraints.

The other six aircraft related costs generate a seat-mile difference between the two European operators of about 1.2 cents. This comes from differences in fuel price, maintenance costs, crew productivity and landing charges. Some reductions would come with economies of scale as a no-frills' operation grows.

The aircraft-related cost achieved by the European no-frills airline is just over 7.0 cents per ASM, while the major scheduled carrier has a cost level of 11.27 cents. The US airline has a cost base of 5.57 cents. This compares with Southwest's cost base of 7.0 cents. This, however, includes all the airline's labour

costs, as well as ground handling, airport taxes, ticket distribution charges, and overheads. The costs computed here then probably come close to Southwest's actual level.

Adjusted for a load factor of 65%, the aircraft-related costs are 8.57 cents, 10.89 cents and 17.34 cents per revenue passenger mile (RPM) for the US no-frills, European no-frills and European major airline respectively. This gives us passenger costs of \$36, \$53 and \$76.

The final costs to include are airport tax and ticket distribution, bringing passenger costs at a 65% load factor to 10.46 cents, 15.20 cents and 26.04 cents per RPM. This gives us trip costs of \$44, \$75 and \$114. While this still does not include ground handling, airline overhead and administration charges it clearly illustrates the differences between the airlines and their style of operation.

The \$40 cost difference between the two European airlines does not explain the wider difference in fares charged by each, but does demonstrate the fares the no-frills airline are able to charge.

A major airline will have higher overheads associated with the complexity of its operation. The \$40 cost difference means that major operators can sell a small portion of their seats at a fare to match the no-frills carriers on the routes where they compete.

While major carriers still have higher overheads and labour costs, they could adopt a virtual airline strategy. This would reduce at least some of their overheads. With their established market base, this would pose a significant threat to the viability of the smaller no-frills carriers.