AIR BUCKS

BUILD YOUR OWN AIRLINE

Impressions

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Impressions Software Inc.

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Thank you for buying this product. It is the result of a great deal of hard work and careful thought, and we hope that it will give you many hours of enjoyment.

We are proud of our games, but we know that there is always room for improvement. If you have any comments or suggestions about this product, we would be delighted to hear from you. Please take the time to fill out the enclosed registration card. We can then add you to our mailing list, and keep you informed of new products and special offers as they come out.

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INTRODUCTION

The game begins in 1946. You have invested your last hard-earned dollar to found your own fledgling airline company - Air Bucks. Starting with only $100,000 and one small Dakota DC-3, it is up to you to make the key decisions which will decide whether Air Bucks will mature into a globe spanning empire, or wither and fail.

If you can last, the game will span the ensuing years and decades. Not only will your own fortunes evolve, you will also live through this period of modern history. The world about you will change. Whether it's the introduction of the first civilian jet airplane, or the death of a great world leader, no year will be the same as the last. PC users will see newspaper updates illustrating the significant recent events at the end of each game year. Thus history provides the backdrop for the success story called... Air Bucks!
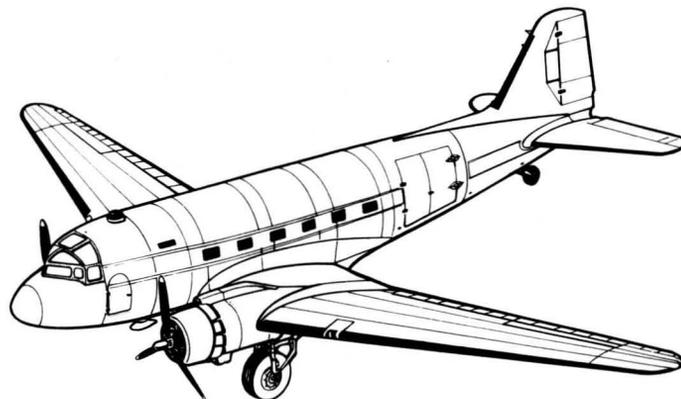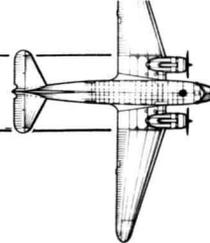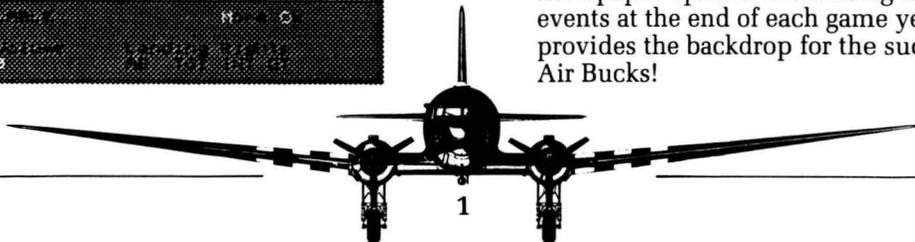
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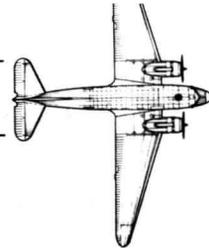
Air Bucks begins in 1946, when you are 25 years old, and continues until you are ready to retire 40 years later. At the end of each year, and again at the end of the game, the airline industry will announce its awards - to the companies with the highest turnover, largest fleet, and most air routes. Your goal is to finish the game with the best rating in each category.

If you fail to do this but your ratings are good, you have still expanded from one stretch of Florida asphalt to a world-wide airline, and made a few bucks in the bargain. At the very least, you should try to keep your airline solvent until the end of 1985.

Regularly throughout the game, you will receive updates of your progress - are you the biggest, the richest, the most popular airline? The better these assessments are, the better you are doing.

You will also be shown financial results for each airline every year. Air Bucks is one of four main competitors vying to control the world's airways. The others are:

Trans Global International (TGI)
International GT (IGT)
Great Times Inc. (GTI)

In fact, each of the four can be assigned to computer or human control, or disabled altogether. This allows up to four players to compete.
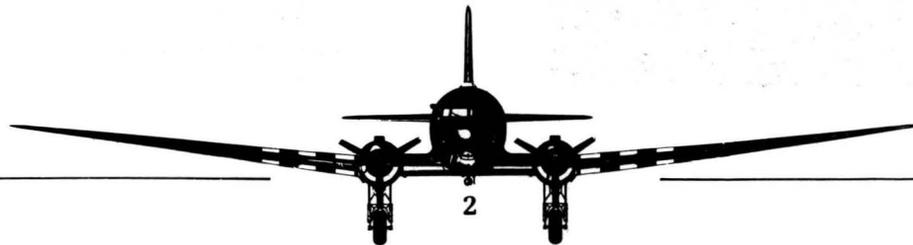
INSTALLING AND RUNNING AIR BUCKS

Instructions for installing and starting up Air Bucks
can be found on the Technical Supplement enclosed
with this game.
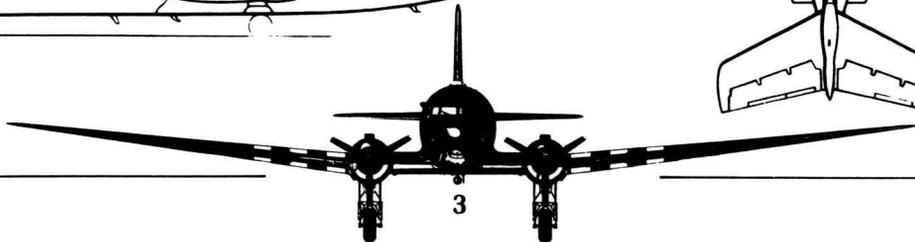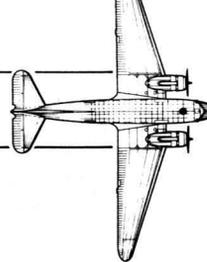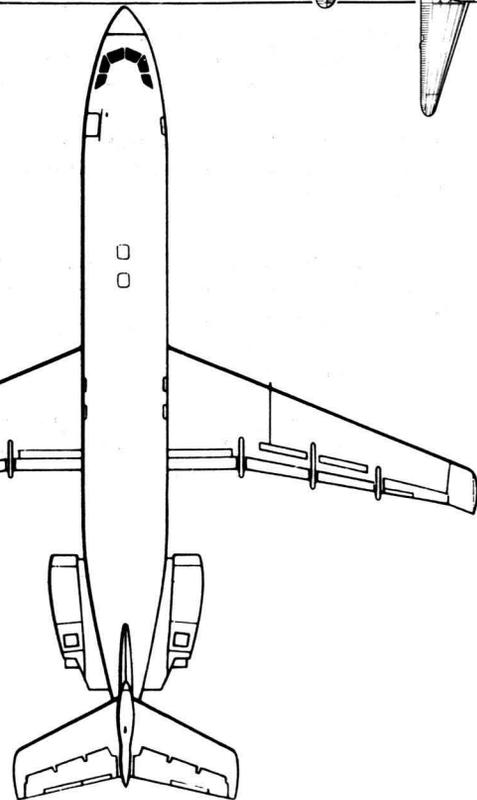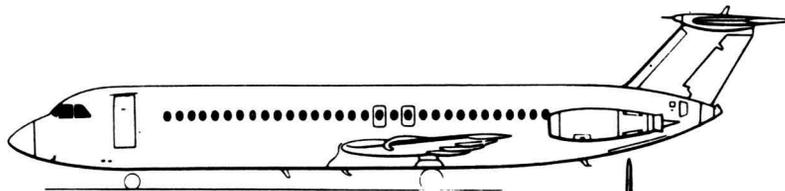
GETTING STARTED:
INTO THE WILD BLUE YONDER
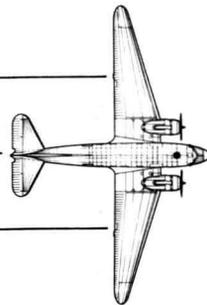
Air Bucks is first and foremost an enjoyable, fun
game, and secondly an airline simulation. Your main
decisions will be:

Which airports to buy landing rights for
When to buy new planes, and how to outfit them
What routes to send which plane on
How much to charge on each route
How to market your airline

When you have a large fleet flying all of the best
routes more profitably than your competitors, you
know you are on the right track.
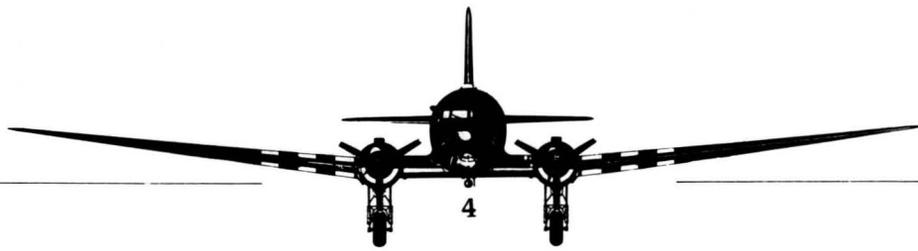
THE INTERFACE
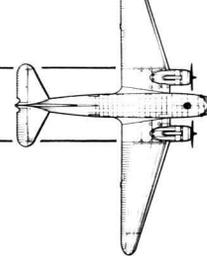
Air Bucks is designed with an easy to use, pull-down menu interface which can be controlled entirely by mouse or keyboard.

Mouse users: whenever you are told to click on something on the screen, just move the white mouse arrow pointer over it and press the left button. Pressing a key while over an icon or command works in the same way as pressing the mouse button, so keyboard commands will not work when selecting a command with the mouse.

When the computer player is thinking and carrying out his plans, the mouse pointer will change to a picture of a computer. During this time, you will not be able to enter commands into the computer. As the game begins, this will be nothing more than a brief flickering of the pointer. However, as the computer-controlled airlines grow, it will take longer for the program to make its plans, and the pointer may be disabled for a second or more at a time.
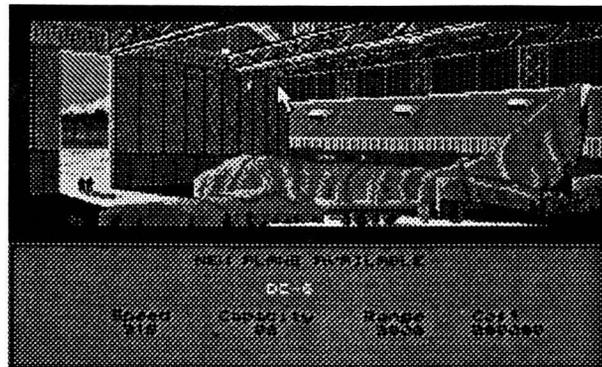
Across the top of the screen is a bar containing the titles of several pull-down menus. To select a menu, either click on the title, or type its highlighted first letter on the keyboard. A menu of commands will
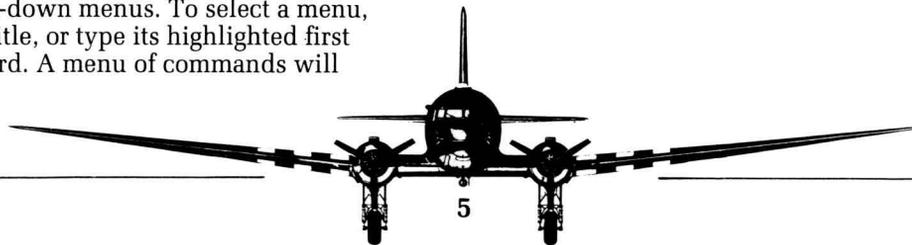
appear; to choose one, just click or type in the same way.

To leave a menu, press the space bar, or click outside of the menu area. Most screens that will appear over the main map can be left in the same way. It is important to note that game time only passes when no menus are being used, so exit your menu if you want the game to proceed.

To ensure that the computer will recognize all keyboard commands, always remember to leave your CAPS LOCK key switched off.

Finally, whenever you are using the mouse to alter quantities - for example changing ticket prices - clicking with the right mouse button will produce several additions or subtractions in quick succession.

To speed up the process of entering numbers, certain screens (for example the ticket price screen) will allow you to type in a value directly. To do this, simply highlight the field that you wish to alter. You will now be able to type in your number. When finished, press Enter/Return. The number will be accepted by the game, and the highlight will move on to the next field.
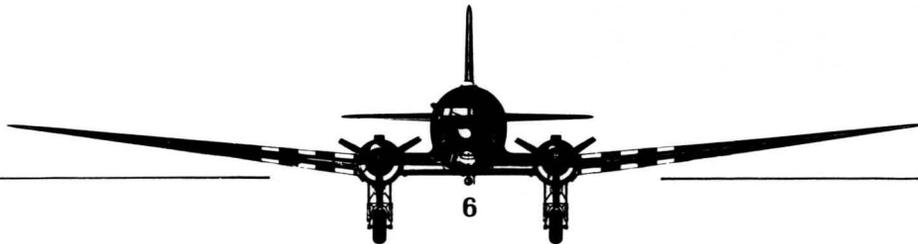
GAME OPTIONS
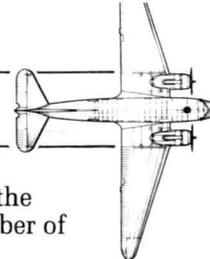
The first menu from the left is titled "Air Bucks." It has a number of commands which will change the way the game plays:

Sound toggles all music and sound effects on or off.

Game Speed determines how quickly the months and years of game time pass. On a faster speed, you will not have to play for very long before a month passes in the game. On Slow, it will take much longer.

If you have a lot of decision-making to do by the end of the current month, it is a good idea to switch to a moderate speed. When you are happy with your operation, you can then change to Fast or Turbo, and watch how things progress.

If you want to play a shorter game, keep the speed on Fast or Turbo continually, and you will complete the 40 years of the game more quickly.

Difficulty lets you specify how hard life will be for each of the four airlines. The difficulty determines how long it will take that company to acquire new landing sites, and how frequently planes will develop mechanical errors, among other factors. To set the difficulty for an airline, click on the displayed current level, or type the number of the airline (1, 2, 3 or 4).

Initially, the size of each airport city in the game is a reflection of the size and air traffic of that city in real life. The **Randomize** city size option within the Difficulty screen will reset each airport city in the world to a random size, either small, medium or large. Since the location of larger cities is crucial to many decisions, this demands different strategies from the players.

Player Types allows you to determine how many airlines will compete, and how they will be controlled. There are four companies which appear in the game. Each one can be given one of three settings:

Controlled by a human player
Controlled by the computer
Not in the game at all

To change the setting for one of the airlines, just click on the current status, or hit keys 1 - 4 repeatedly until the desired setting is shown.
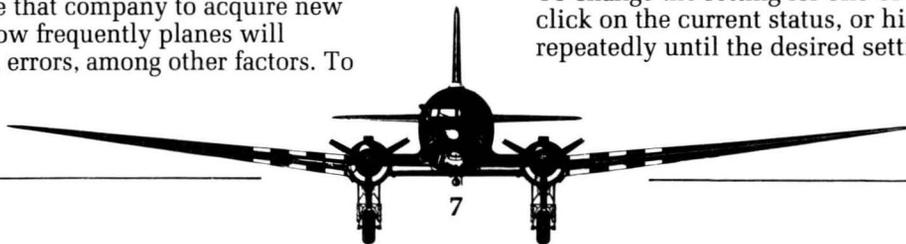
Air Bucks with Several Players

Air Bucks can be played with up to four human players. However, since it runs in real time, rather than in turns or rounds, the players will have to come to some sort of agreement about who gets control of the computer when. Our recommendation is to let each person have one opportunity to use the mouse per month, during which they can make as many commands as they want; then let the rest of the month pass before stopping the game for more orders. Remember that game time stops whilst menus are being used.

Making deals together adds a new dimension to multi-player games. If two people agree to swap airports, for example, they can sell them to each other for the same price, using the Site Trade command.

Disk Options

If you wish to, you can save a game so that you can return to it later. Considering the length of real-time it takes to complete the forty years of the game, this will be an essential command.

You can save up to three different games onto your disk at one time. To do so, select the Air Bucks menu and **SAVE GAME A, B or C**. The game will save onto your current drive and directory. To load in a game you have saved earlier, use the **LOAD** commands on the same menu. Saved games are given the filenames GAMEA.AIR, GAMEB.AIR and GAMEC.AIR.
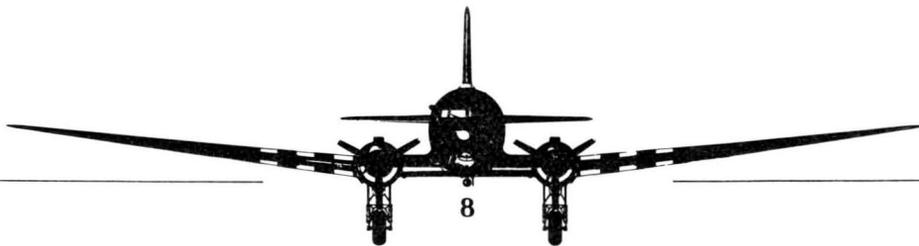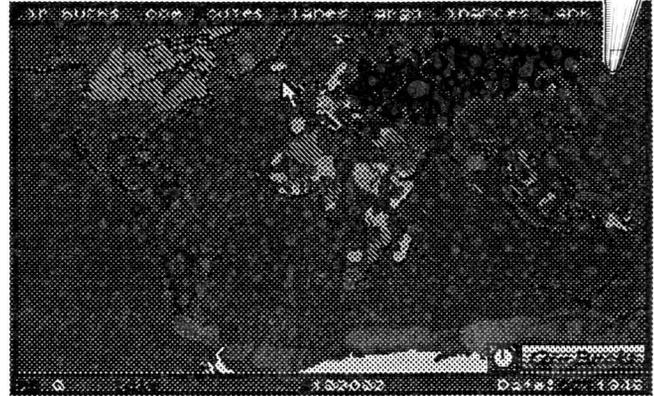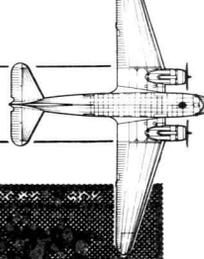
When you first enter the game, you will see a large map of the world. All of the airports for which you have landing rights (you start with just Miami although in Game Options you can change this to a different airport) will appear as red squares. This map is the main screen, from which you will issue most commands.

Below the map is an information bar. On the left of this is the flight number of your currently selected plane - AB0 at first. To the right will be the current
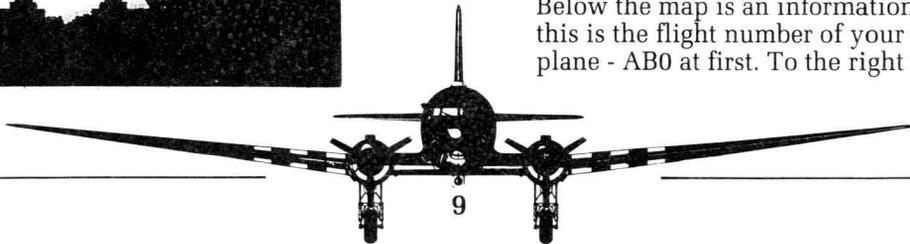
activity or destination of the plane, your total current bank balance and finally the game date.

Above the date is the Air Bucks logo and a clock icon. The clock shows roughly how much of the current month has elapsed. The logo tells you which of the four airlines you are commanding or viewing.

You are allowed to study the progress of your competitors. To do so, click on the logo repeatedly, or type 1,2,3 or 4. The Air Bucks sign will be replaced by the logo of one of the other airlines. All of the commands which relate to information and analysis can be used with respect to every company, although you can only make decisions for your own.

For example, if you select a computer-played airline, and choose the Ticket Price command, you will be able to see the prices this other company charges, but you will not be able to change them.

Landing Rights

Your planes are only allowed to land at airports where you have landing rights. When the game begins you and your competitors only have rights to Miami. So your first step on the road to success is to find yourself a second airport to send planes to! However, as the game progresses the early acquisition of landing rights is important, because only two airlines can have rights to each site. For example, if two other airlines have applied for rights to New York, then you will never be able to fly there (unless another firm offers its rights for sale or goes bust, thus making all its landing rights available). Commands for acquiring and handling landing rights are covered in the next chapter.
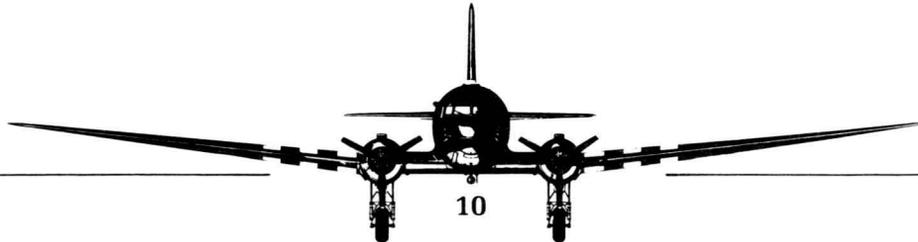
Miami

Miami is a special airport. All four airlines begin with landing rights there, and nobody will be able to sell those rights (since there is no one who needs to trade for it). New airplanes are also delivered there unless you have selected somewhere else for this purpose.
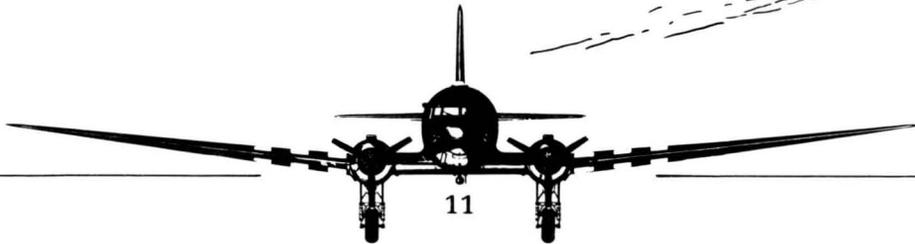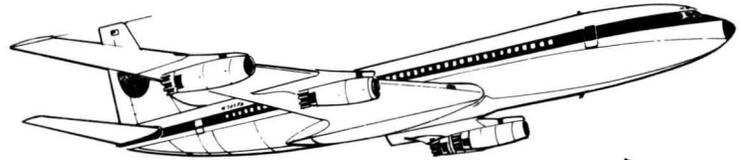
LANDING RIGHTS
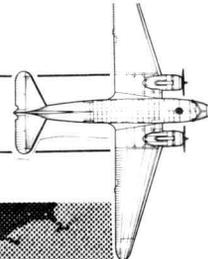
As discussed above, the acquisition of certain, strategic landing rights can be one of the keys to building a successful airline. This chapter discusses how you can seek out, negotiate for, acquire, and trade landing rights. All of the pertinent commands are located in the **Routes** menu.

The Landing Rights Screen

To acquire the right to land at an airport, select the Routes menu, and then the **Negotiate New Site** command. You can only start one new application a month - if you try for another, your Negotiate command will be ignored.

Dots representing each airport will appear on the normal world map. If you already have rights to an airport, it will be red. White cities are ones you have bid for, but not yet been cleared to land at. Airports still available are black, while those sites fully bought up and thus unavailable are green.

The information bar at the bottom of the landing rights screen will tell you about the currently selected city. At the left are the name and size of the city. Then comes the distance between it and the closest site you already own. On the map, a line will
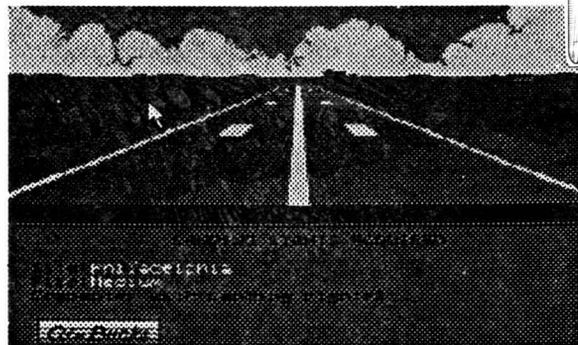
join these two cities. Remember, if this distance is greater than the range of your planes, you will not be able to reach the new city!

Next, the time in months that it will take for the application to be processed is displayed. Your first application will take one month, your second two and so on. If you have set the difficulty level to hard or hardest, the process will be even slower.

Finally, you will see the current cost of these rights. Small cities are cheapest, and large ones most expensive. In addition to this initial payment, all
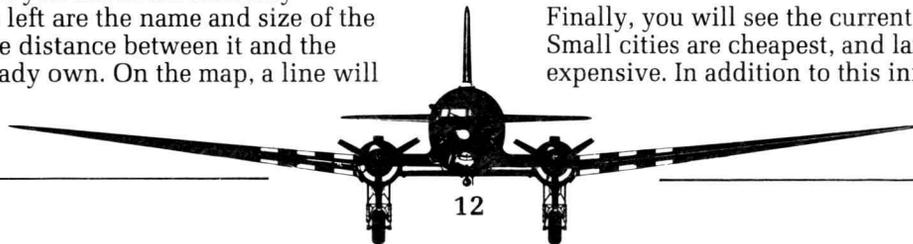
landing rights bring a permanent annual charge. This varies, but is usually around 10% of the current purchase price.

You can select a new city to examine by clicking on it, or you can step through the entire list using **Next** and **Previous.**

Buying Landing Rights

When you are sure that you want to buy rights to the selected airport, click on **Acquire**. After the necessary time has elapsed (see above), a screen will appear notifying you that your application has been approved, and landing rights have been granted. Your planes will then be able to land at that airport. However, you will still need to make **Routes** to lead planes to your new airports, which is explained in the next chapter.

Selling Landing Rights

If you are desperate for cash, you can sell some of your landing rights. To do this, select the Routes menu, and then the Site Trade command. A list of all used airports will appear. (Select More to page through longer lists.) Click on an airport which you

own rights for, or type its reference number. The computer opponents may offer bids for your rights. Click on an airline or enter their number to accept the bid. (To quit without accepting, select Cancel.)

Any other human players are given a chance to enter their own offers too. Either type in the amount or use Inc and Dec to adjust the bid, and Step to change how much the offer is increased or decreased each time.

Negotiation Progress Report

The Progress Report command on the Routes menu will show you how your current applications are proceeding.
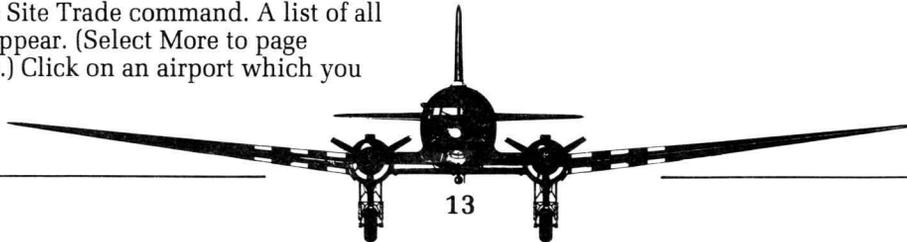
ESTABLISHING ROUTES
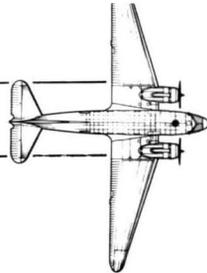
After acquiring landing rights at a second airport, it is time to set up your first route. The **Alter Route** command lets you set destinations for your currently selected plane. For convenience, this command is under both the Routes and the Planes menu - there is no difference between them.

Setting up a New Route

To define a new route, select **Make** within the Alter Route command. You can give a plane anywhere between two and eight destinations. It will fly a continuous path through all of them, looping back to the first stop after the last unless you specify a charter flight by clicking on **Service** - then the plane will stop at the last site on the path (see below).

To set the first destination, click on the space next to the number "1" on the route panel, or just type in the number. The world map will reappear, with your airports marked in red. Click on the airport of your choice, or step through them all with **Next** and **Previous**. Selecting **Ok** or pressing the space bar will confirm your choice of airport, while **Remove** will cancel the current destination. Repeat this process to set up as many destinations as you want. You can see the route diagrammed on the map by choosing **View**.
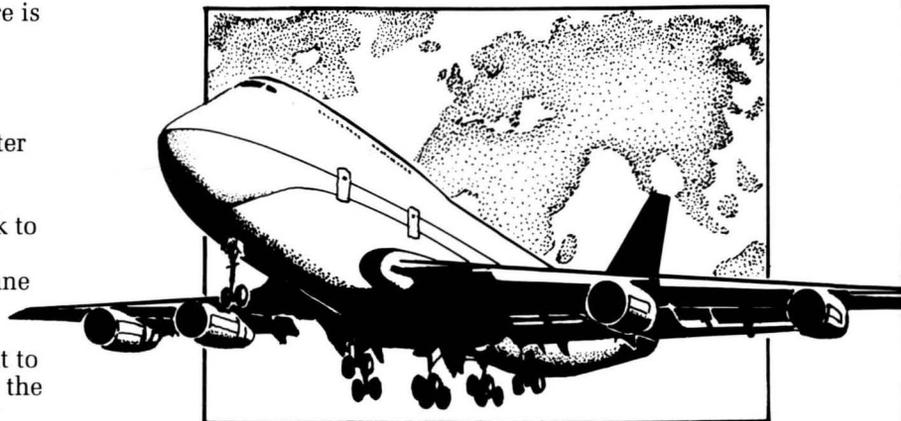
Once you have made a route you can either select **Assign** to allocate this route to the current plane, or **Exit** to leave this menu without allocating it to any plane.
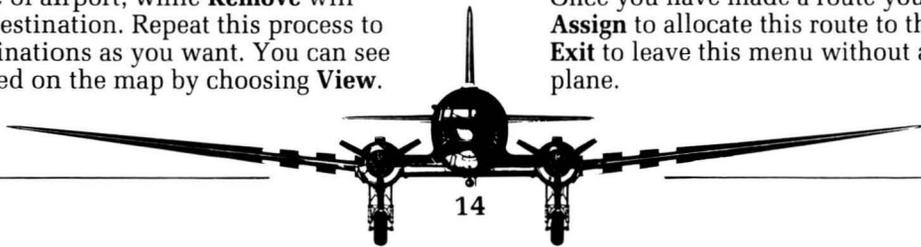
Charging for your Route

Having told your plane where to go, the next decision is what to charge the passengers. The **Ticket Price** command (on both the Route and Planes menus) lets you do this. For each leg of the journey, you can set three prices - for **1st** class, **2nd** class (coach) and **Cargo**.

Using this command brings up a screen with a grid of numbers, one for each class on each leg of the route. To enter new prices, simply select the price you wish to input, using the mouse or cursor keys, and then type in your price between 0 and 999. Pressing ENTER moves you to the next price automatically. Also, within a given leg of a route, you can choose a particular class by selecting **F**(irst), **E**(conomy), or **C**(argo).

You can also alter all of the prices at once, by a certain percentage. Change the displayed percentage (it starts at 10%) by selecting **Increase** or **Decrease**. Then, use **Up** and **Lower** to raise or lower all prices for that route by that percentage of their current values. This feature is useful for reacting quickly to changes in demand or oil price.

The **Replicate** option sets all prices for all classes and destinations to the value of the price currently selected.

Price check will show you what tickets on the same route cost from your competitor, if anyone else is flying it.

If you want, you can set prices for a different route without exiting the screen and starting again. Use + and - to move through the routes you have already created.

Adjusting old Routes and Prices

Once you have defined a route, you can refer to it again later, and quickly assign more planes to it. Every route you set up is given a number. When you choose **Alter Route**, the black panel over the bottom right-hand corner of the map shows the route number of the current plane, and the number of planes using that route. The route is also shown on the map. Using **Next** and **Previous**, you can step through your routes.
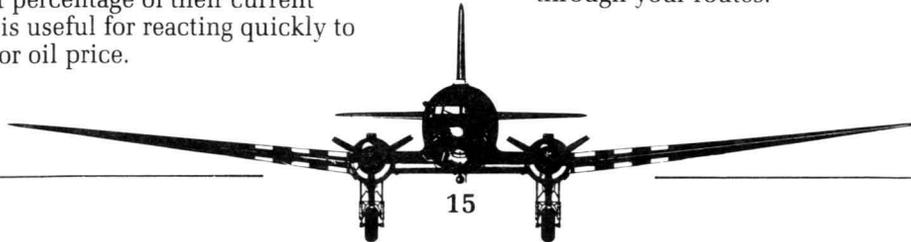
Once you have selected the proper route, **Report** will give you the details on it, **Amend** will change it and **Delete** will erase it altogether.

It is important to remember that one route can be used by several planes. In that situation, any changes made to either the route layout or to ticket prices will affect **all** of the planes using that route. If you want a plane not to be affected by changes to a route, then you should create a new, individual route using **Make**, for the same places, and **Assign** it to this plane.

To change the ticket prices for a particular route, select **Ticket Price** from the Routes menu. Then, use the same commands to change the prices as you did to set them originally.

Remember, ticket prices are considered part of the route information, so that when you define or change them for one route, all of the planes that use or come to use that route will obey the same price structure. As mentioned above, make a new route if you want unique prices for one plane.

Switching a plane Between Routes

Using the **Alter Route** command (on the Routes menu), it is also easy to move a plane from one route to another. Just select the aircraft in question as the current one, then select Alter Route. Step through the routes which have been defined with **Next** and **Previous**. Choose **Report** to get the details of the current route, and **Assign** to allocate the current route to the current plane.

Out-of-Range Routes

When you assign a route, your trusty plane will head for the first stop, and start travelling the circuit ordered. If any leg of the journey is too long for the craft's range to handle, it will stop before heading to that destination, and send you a message requesting new orders.

Chartered and Scheduled routes

Each route has a service type - Chartered or Scheduled. A plane on a scheduled route will carry on flying indefinitely. When it reaches its final
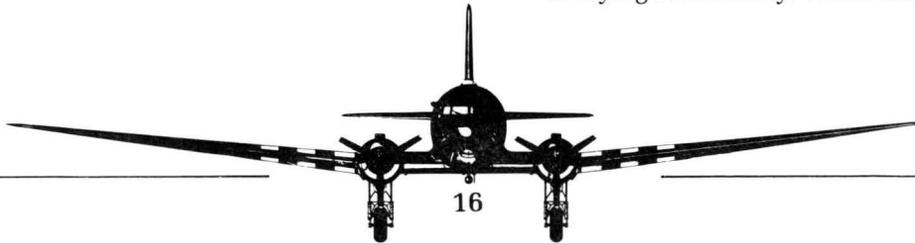
destination, it will go back to its first stop, and repeat the same flight path. Chartered planes stop when they reach their final destination.

Chartered routes are mainly used to get planes onto routes which are completely out of their range - e.g. taking a new plane from Miami to Europe and using it there. You can tell a plane to go somewhere and stop by making a route, and changing the service type to charter. The plane will stop at the last destination, rather than looping back to the start of the list. Having moved the plane to the right area, you can set up the actual, scheduled, route you want from it.

Cargo planes may also find chartering useful. If you have a cargo plane which you always send to collect specific cargo loads as they appear, you will probably only want it to fly its route once. Then it will wait there until you send it to pick up the next load of cargo that crops up.

Looking at All Your Routes

The **View Routes** command on the Routes menu will show every route you are using on the world map. This command is a good way of seeing if you have missed any potential routes between two cities by checking for a line connecting them. Also, this command is a great way of seeing your small enterprise grow to cover the world!
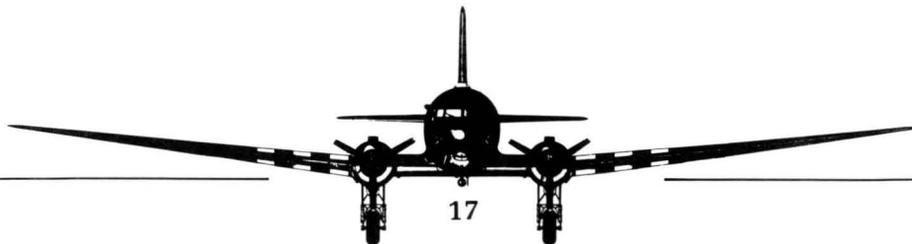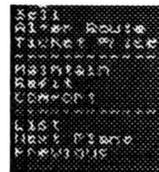
PLANES
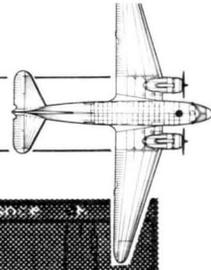
Once you have created your first route, and started your DC-3 on its way, your airline will finally be operational. Having done this, the next step is to expand. For this, you need more landing rights, more routes, and most importantly, more planes. The following commands and procedures are accessible from the **Planes** menu, and will help you purchase, configure, maintain and control the planes that make up your airline.

Selecting a Plane

The commands that affect individual aircraft, such as Buy, Sell etc., all apply to the one plane of your fleet that is currently selected. To select a new plane, go to the **Planes** menu, and use **Previous** and **Next Plane** to step through them all, or select List and click on the one you want from the list of planes. Remember that the information bar across the bottom of the screen tells you the number and status of your current plane.

If the plane is flying a route, its status will just be its current destination. Other possible status values are **Idle** and **In Service**. Some servicing time is unavoidable, but no plane should ever be idle. If one is, give it a route to fly straight away - or investigate any possible problems it may have.
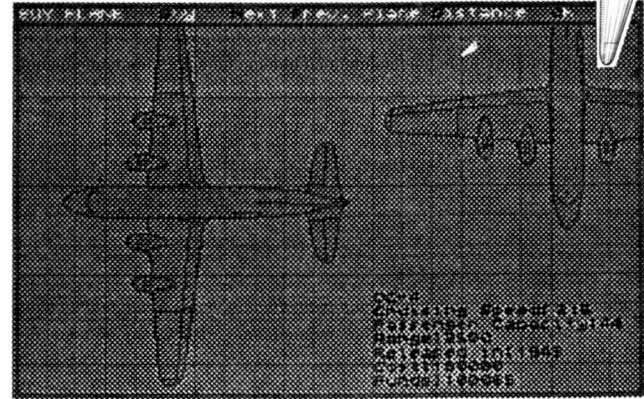
You can also check the status of all of your aircraft by selecting the List command. Each plane you have is shown, along with its type, speed, passenger capacity, range and status. If you own more planes than can fit on the screen at once, use More to see the next screen's worth of planes. As mentioned above, click on a plane to choose it as the current selection.
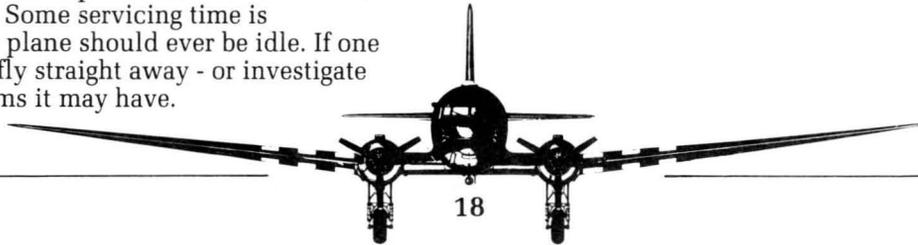
Buying a New Plane

Unless you want to be the world's smallest airline, you will want to use the **Buy** command, sooner rather than later. Selecting it will show you a blueprint and technical information on one type of plane. Click on Next and Previous to move through the available planes. Initially, only two models are available, the DC-3 and DC-4. As time passes, new planes will come onto the market. They are announced at the start of the year in which they are launched.

Select **Buy** to actually purchase the current plane. All new planes are delivered to Miami, unless, as otherwise stated, you have selected a different delivery airport.

To change your airline's base from Miami, select the Difficulty option from the Air Bucks menu, and select your desired base. Note that if you choose a deserted location, you may need to wait a number of years before you have aircraft which can fly to anywhere in range!

Evaluating New Planes

The technical statistics of each plane - speed, capacity and range - are very important. Fast planes are more attractive to passengers, and complete more flights in a given time. Planes that carry more, obviously allow you more potential profit - but also incur higher costs.

Range determines what routes the craft will be able to travel. You can compare range to the distances between airports within the Buy screen, using the **Distance** option. When selected, the world map appears with all airports highlighted. Click on any site to get the distance from it to Miami. Choose **Select** to make the currently selected airport the base from which distances to others are measured. Then, click on any other city to see how far it is from this new base. As usual, you can also select different airports by using **Next** and **Previous**.
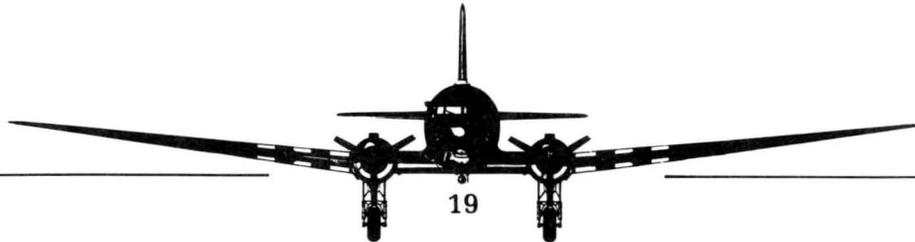
Fitting and Refitting a Plane

When you buy your new aircraft, you must decide how much of its carrying capacity you want to dedicate to 1st class seating, 2nd class, and cargo space. Your choices here are important, as they will affect your profits for that plane. Use the various options displayed on the top menu-bar, or the arrows on the small panel near the plan of the plane, to increase and decrease the three categories. Select **Ok** when you are happy with the arrangement.

If you later decide to change the seating plan for a plane, you can refit it by choosing **Refit** from the Planes menu. The commands here are the same as when fitting the plane for the first time. However, remember that there is a small charge for this service, and your plane will be taken off its scheduled route until the work is completed.

Selling a Plane

If you need to, you can also sell planes back to raise money. If you choose the **Sell** command from the Planes menu, you will be told what your plane is worth. You can then confirm or cancel the sale. Note that if you have only one plane you will be stopped from selling it; this is an airline simulation, and if you want no aircraft, we suggest stopping the game entirely!
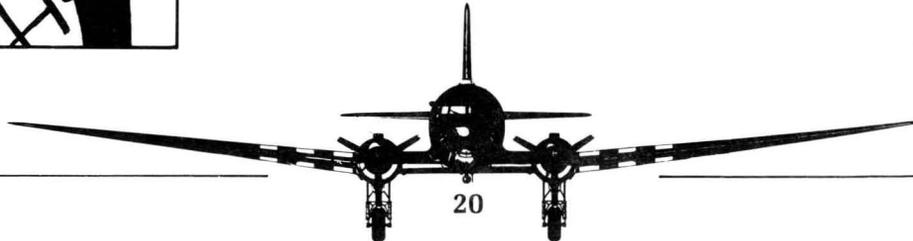
In-Flight Services

As an airline, you have the option of offering a cheap yet cheerful service, or more costly, luxury flights. When the game begins, your aircraft are outfitted with the minimum comforts necessary for acceptable service. You can then update the fleet with extra facilities by selecting **Comfort** from the Planes menu. Then simply select whichever luxury items you wish to provide - you can provide more than one. All planes in your fleet will provide the same services. Consumers' choice of a preferred airline is affected by the level of comfort provided.
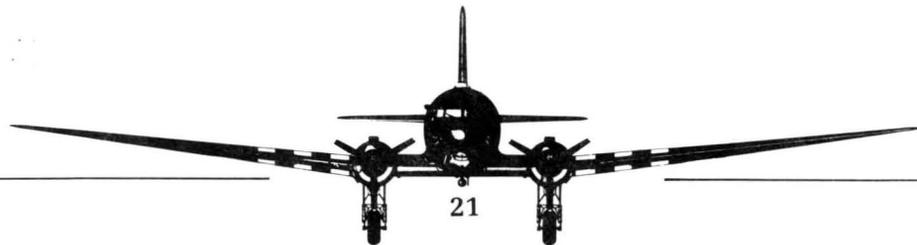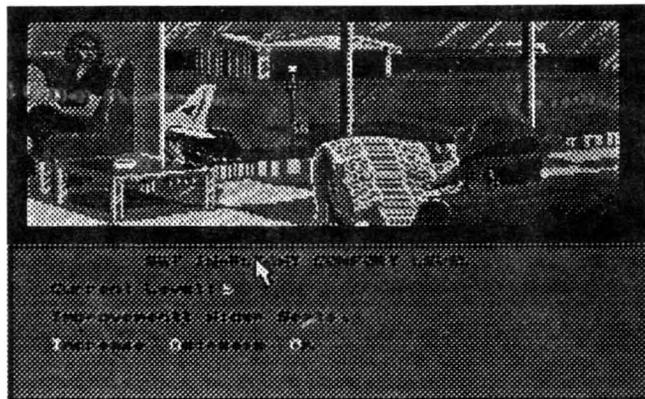
Maintenance

State of the Art technology like aircraft needs to be properly maintained. Thus each of your planes will need to go into service for one month in each year. Additionally, each plane may break down from time to time, requiring extra service. The more you spend on preventative maintenance, the less breakdowns you should get. Other factors that affect the frequency of mechanical failures are the difficulty level set for your airline, and the age of your planes.

The **Maintenance** command under the Planes menu lets you choose the level of maintenance you want to give to your fleet. High maintenance means that each service costs more, but you will probably need fewer, since breakdowns will be rarer. Remember that out of commission aircraft cost you lost revenue as well as maintenance charges. As with so many business decisions, you will need to find the balance which best suits your airline.
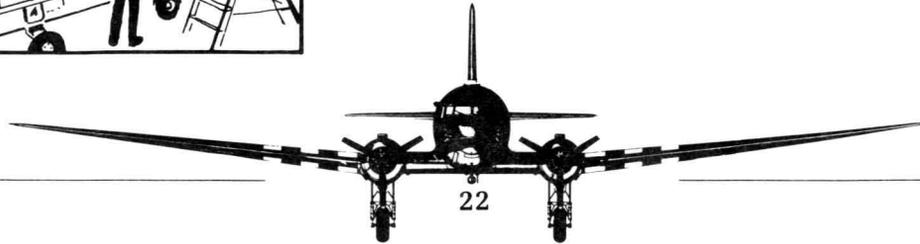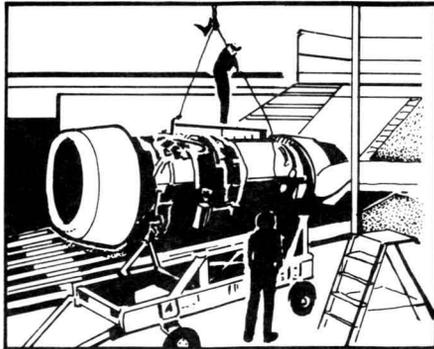
Attracting Passengers

The number of people who choose to fly with you depenends on a number of factors: airport size is a key one. The number of people who want to go from small city to small city is far less than those who will fly large to large. First-class passengers, particularly, prefer direct, large city to large city travel. However, remember that some small cities are essential refueling points for longer routes to large cities. Such small cities will be more popular than others, once such a route is up and running.

Ticket prices are obviously a crucial selling point - not only should they be cheap, but they should offer more value to the consumer than the competition. Relative prices of travel styles also matter - if your first class prices are less than economy, don't expect too many passengers in the latter category. People will cough up high prices more willingly if you have a high comfort level and fast, new planes. Marketing, reliability and staff morale also affect demand for your airline. Finally, the less airlines and planes flying a route, the more customers there will be for those who are there.

Attracting Cargo Jobs

Cargo availability works differently from the passenger business. From time to time, specific cargo pick-up jobs will appear at each airport. If no such job is present, no cargo will be carried. Jobs can be quite large, so if a consignment is available for pick-up, you could well fill the cargo holds. This means that, although cargo income is a bit more variable than passenger fares, it can still end up a lucrative service to offer - especially if you are the only airline to carry cargo on a particular route.

If you have a large amount of cargo capacity in your fleet - particularly if you outfit cargo-only planes - it will be worth your while to examine the availability of cargo jobs closely. You can do this via the **Cargo** menu. The **Jobs Available** command gives you a list of cargo loads waiting for a carrier right now. The **Demand Report** shows you a world map with areas which are tending to produce lots of jobs at the moment highlighted in black (high demand) or red (very high demand).
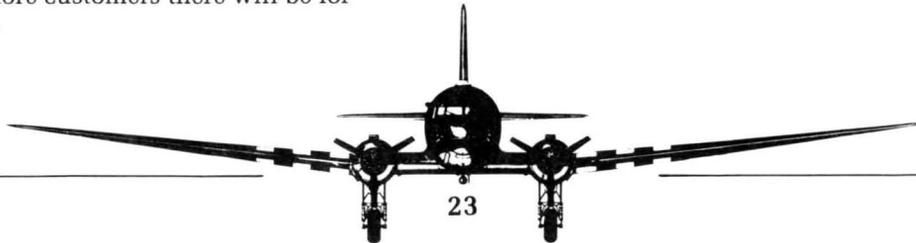
FINANCE AND ECONOMICS
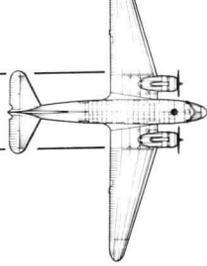
Finance and Economics

Very probably, the time will come when your own resources are inadequate for your needs. In that case, in order to fulfill your mad dreams of world domination, you will need to first come crawling to the bank manager, or worse - sell some of your corporation. But don't worry — when you're master of the skies, you'll get even. You'll get even with them ALL!

Meanwhile, while your plans begin to take hold, you can use several informative charts and graphs to help you measure your progress, relative to your opponents.

Bank Loans

Selecting the **Loan** command under the Bank menu displays your current borrowings, and the maximum the bank is prepared to lend you in total. When the game begins, you will not have borrowed any money, but if you have run out of money once during the game, the bank manager will give you an emergency loan, and that will show here. The interest rate you will have to pay out on your loan is there also. Bear in mind that this rate can change, and you might end up paying out more than you expected.

The number of years over which the repayments are to be spread is also shown. The longer you want to take to repay the bank, the more interest you will end up paying by the end of the term. Repayments are exacted at the end of each game year. Select **Add** and **Subtract** to alter the size of your loan by $10,000, and **Increase / Decrease** to change the term of the repayments.

If you are comfortably wealthy, and wish to pay off the loan entirely, just decrease the term of the loan until you are set to pay it all out at once.
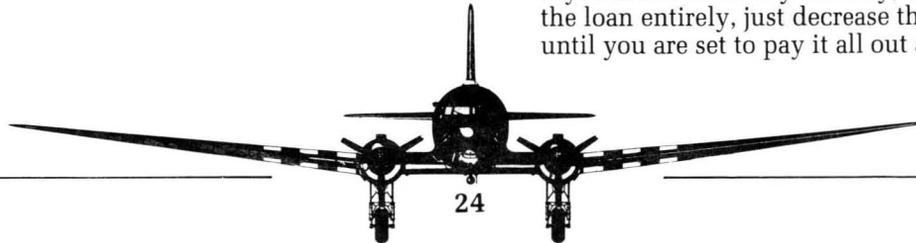
Selling Shares

At the start of the game, you own all of the 100 shares in your airline company. As a last resort, you might consider issuing new shares through your stock broker. The amount they will sell for depends on the current worth or valuation of your company. The worth of the company in turn depends on the profit it made in the previous year, and how many assets it has (For the economists out there, the specific equation is: Cash plus Worth of planes minus Debt).

So, if you issue 20 new shares, and your Company Valuation is $100,000 your airline will get $20,000. This will give the company more cash . However, it has two very big disadvantages. One is that you commit yourself to paying a dividend each year to your new shareholder - usually around 10% of the worth of their shares.

The other is that issuing new shares represents a significant loss for you personally. Whereas you used to own all of the company yourself, you now just run it, and own a smaller proportion.. This means that a final result in which your Airline does well, but you were forced to sell out a lot of it, is less of a victory

than if you end up completely owning a moderately successful company. But owning a small percentage of a very large company can also be worth far more than owning all of a tiny one.

Be aware, too, that if you issue new shares, your competitors may buy them. If any one company buys more than 50% of the total shares in your company, you will lose the game.

To sell shares, select **Shares** from the Bank menu. Use **Increase** and **Decrease** to alter the amount of shares you wish to sell, and **Ok** to confirm. It is also possible to buy back shares that you sold earlier, though of course the bank will charge a fee for this. Use the **Buy Stock** option for this.

You can also buy up the stock of the other airlines in the game if they issue any new shares. These shares will produce an annual income. Note that you can also buy up over 50% of the shares of another airline- making you the owner. For logistical and playability reasons, this will not allow you to over-rule decisions made by that airline, however you would clearly benefit from its success.
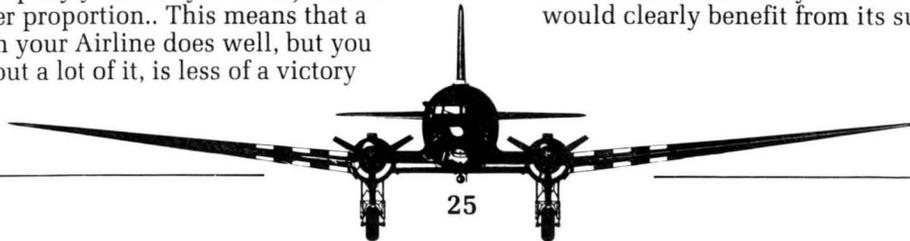
Going Bust

All airlines, human or computer controlled, can fail if they are mismanaged, or squeezed sufficiently by their competitors. When a company runs out of money, it will get a warning from the bank, and an emergency loan to keep it afloat. You will be informed of the event whether it is you or a competitor who is failing. If the bank balance reaches zero again within a certain time, there will be a more severe warning. After that, the bank will foreclose,

and the airline will be forced to shut down. There is no Chapter 11 Bankruptcy protection here — the harsh reality is that without cash, you will not survive!

The Air Bucks Economic Model

The game uses a sophisticated economic and financial model. All decisions are based on real information held within the game; random number generators are not used. For instance, a detailed inflation table for the whole of the 40 year period is held within the game and used to determine the price increases, and planes are introduced at historically accurate prices. Demand rises and falls to an extent in line with the prevailing world economy.

Financial Reports

There are three financial reports that you can use to see exactly where you are making and losing money. They each feature a list of all of your planes, identified by flight number and type. Each plane then has figures each telling you how some aspect of its business is doing.
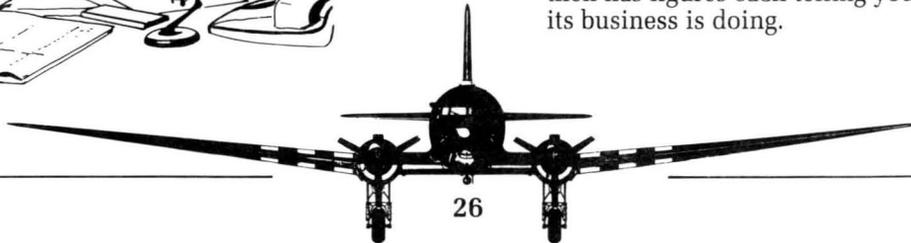
Plane Income

This is the most general report of a plane's success. Next to the plane type, you see the speed of the plane and the percentages of its space dedicated to 1st, 2nd and cargo class of travel.

Finally, the three crucial numbers appear. The first tells you how much the plane is making in fares revenue. The second says what it is costing you to run the plane - remember that Profit equals Revenue - Cost. Finally, you are told how full your plane is at the moment.

Check these figures often! If there is an asterisk next to a plane, that means that the plane is not turning a profit, and must be dealt with to improve its standing. This feature is very important, and is duplicated on both the **Cargo** income and **Service** income reports.

Cargo Income

This report gives you a detailed breakdown of how the cargo side of the business is going. For each plane you have, you are told its cargo capacity both in terms of cargo units (each the size of a passenger seat) and as a percentage of this plane's total capacity. Then you are shown the income that would be received from cargo if the plane flew at full cargo capacity on all legs of its route, and the costs incurred.

The volume figure is a guideline for how much cargo is generally available for transport on this route. Of course, the actual amount of cargo available fluctuates; this represents a likely maximum in cargo units. So, if the plane's **capacity** in those units is of comparable size, you will often be flying with empty holds.

Service Income

This report tells you how much of your money is coming from first-class passengers, economy travellers or cargo. After the flight number and plane type, the income generated by each class is printed in turn. After this appears the cost of running the plane.
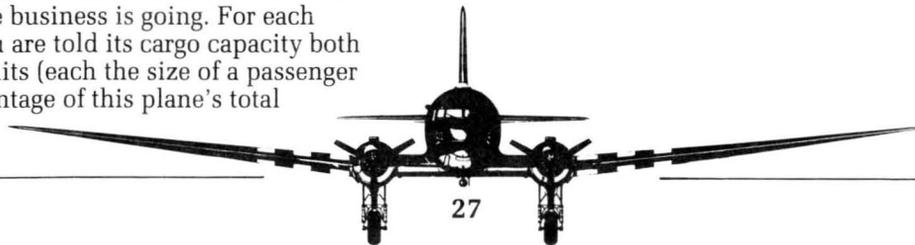
The Profit and Loss Report

To get an overall picture of how well your airline is doing, select the **Bottom Line** command on the Finances menu. You will see a breakdown of all of the sources of cash for your company, and all of its expenses, followed by the balance. Clearly, if you are spending more than you are earning, then you need to watch your spending and sources of income carefully. The figures are shown for the months that have passed so far in the current game year, and for the previous year.

The categories of income are: plane fares, money from selling planes, loans taken out, and cash from selling shares. Outgoing categories are: general (fuel and staff) costs, landing rights purchased, planes bought, maintenance costs, interest repayments and dividends to investors.

Please note that this is very much a cash-based game which is why this cash-flow system is used rather than a true, accounting-style profit and loss report. You will make a nominal loss when you buy planes, therefore, even though you still have the planes to use next year and the years after that. While incorrect, we believe this to be preferable to a less easy to understand set of true accounts.

Note that it is common for fast-growing companies (hopefully like yours!) to spend more cash than they earn — they simply need to ensure a healthy supply of new cash, from issue of loan or stock. Be aware that many profitable companies go bust by not having enough cash to pay for their growth.

Financial Graphs

There are four graphs that you can refer to for more information on your company's success. They are also found under the Finances menu. In each, the fortunes of all four airlines are shown side by side. Above each chart, the maximum relevant value or figure of the most successful of the four airlines is shown to give an idea of scale.

Select **Monthly Income** for a chart which plots each airline's income per month over the last year. The **Yearly Income** command gives the annual equivalent. **Annual Worth** refers to the changing overall value of each company over time. Finally, **Fleet Size** will show you how many planes each airline has in relation to the others.
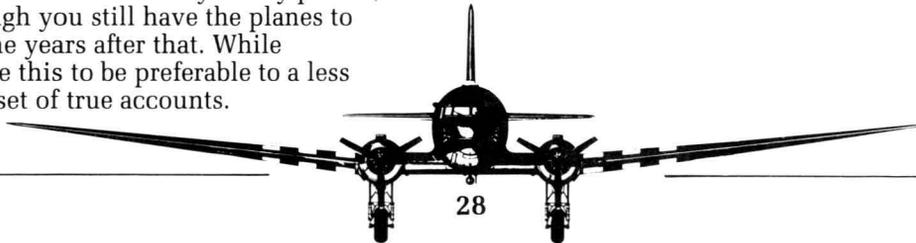
SPECIAL EVENTS:
TROUBLE ON THE HORIZON
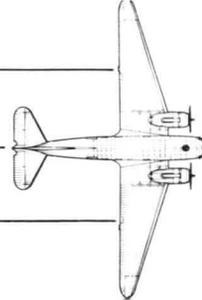
There are a number of events that will occur from time to time in the game. Some of these will affect your airline, as well as others, in different ways.

Fuel Prices

Fuel prices fluctuate over time, and when they do, a screen will appear to notify you of the change. When fuel prices rise, the cost of running all planes will go up. This means that previously profitable runs may now be running at a loss, so examine the income reports on your planes carefully, and decide whether you need to up your fares.
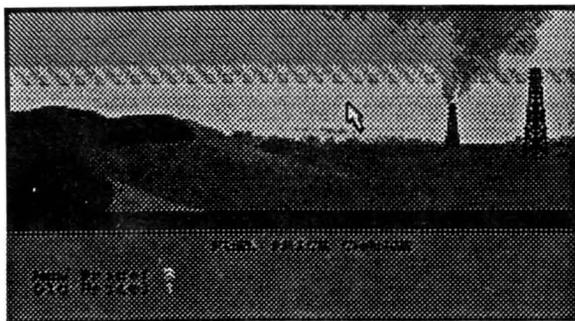
On the other hand, fuel prices may drop, and people who would have otherwise flown with Air Bucks stet decide that they can get a better deal elsewhere. In that case, lowering your fares might be in order.

Strikes

Staff will occasionally strike at individual airports. This means that planes will get NO passengers or cargo from that airport if they use it. However, this will not affect the flow of income from any other stages of the route. The picketing will usually continue until the end of the month.

Bad Weather

This forces the closure of the local airport, and has the same effect as a strike.
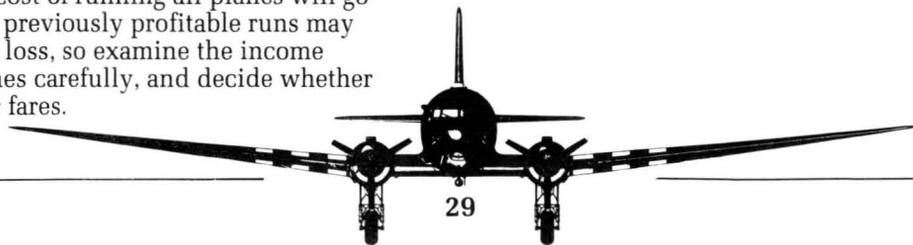
HINTS AND TIPS

Acquiring landing rights is crucial. If you let the other airlines beat you to them, you will find yourself excluded from all of the important sites. Remember that only two airlines can have rights to each airport.

Choose your airports carefully, though. Larger sites cost more, but the volume of trade available will be much greater. Also, consider the strategic importance of sites - if you want to get somewhere in 1950, you may need to stop off somewhere along the way.

Companies with an extensive network of sites of any size will benefit from this on all of their routes, since passengers appreciate that connecting flights will be easier. This can make smaller cities even more worthwhile.

As more planes fly a route, so the volume of traffic available to each diminishes, so spread your fleet around, and look for opportunities to exploit unserviced markets.

Always take careful note of the range of your planes when buying sites or setting up routes, otherwise you may end up setting your pilots unreachable destinations.
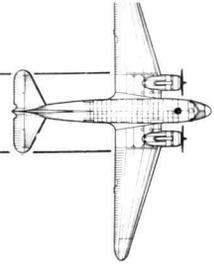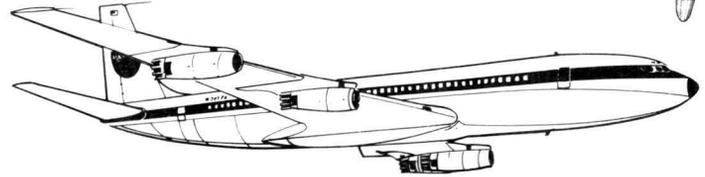
Remember that your planes will have to go in for servicing from time to time, and other events will surely occur which will cut your cash supply for a while. Plan ahead.

For each plane, choose carefully how to distribute seating space between 1st class, 2nd class and cargo capacity. Look to the financial report for information on how each class is doing in your other planes.

Set your ticket prices with utmost care. Study your competitors' fares, and see how completely they fill their planes. Then, experiment with your own price structure. Sometimes, filling every seat will bring in the most revenue. On the other hand, half-empty planes might be more profitable if the passengers that are flying pay enough.
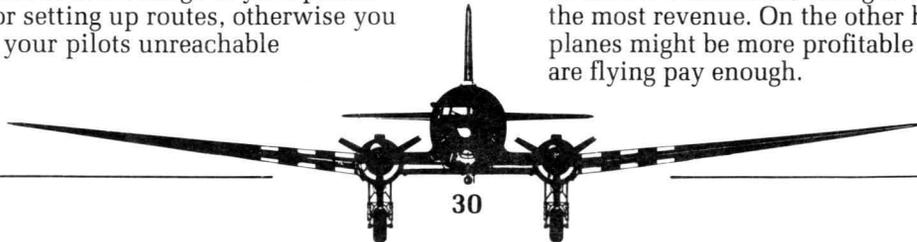
A BRIEF HISTORY OF
THE MODERN AIRLINE
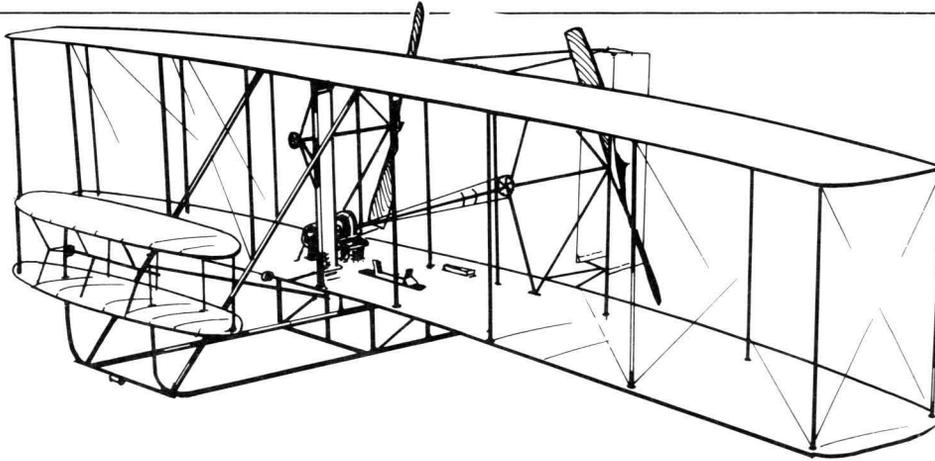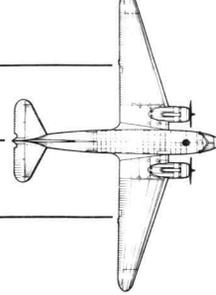
Man has always wanted to fly. It seems so unfair then, that flight is the exclusive province of birds, bees, bats and pterodactyls. Moreover, despite all indications to the contrary, deep down mankind has always believed that it really could fly, if it could only work out how. The interesting thing about the story of Icarus in Greek mythology is that the Greeks seemed to be quite happy with the idea of men flying (not to mention horses). Indeed, Icarus' father Daedalus had no trouble at all completing the first recorded flight from Crete to Sicily, powered by feathers stuck to his arms with wax. The problem for Icarus was not that he couldn't fly but that he flew too well and too high.
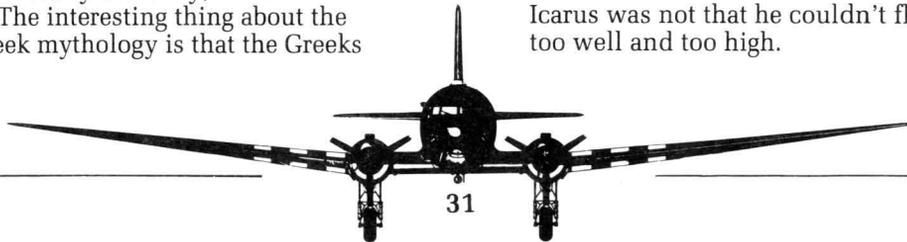
Over the centuries, who knows how many men and women have flung themselves out of trees and off clifftops, with strange contraptions strapped to their backs, convinced that they would perform a neat loop-the-loop and soar off over the rainbow. Many have been sadly disillusioned. Yet with all that enthusiasm and with mankind's irrepressible ingenuity, it was surely only a matter of time before we cracked it. When the Wright brothers finally managed to get their particular strange contraption off the ground in 1908, it is fair to say that they really started something. They literally added a new dimension to world travel.

Of course, today flight is old hat. The only questions remaining are "where would you like to go?" and "how quickly would you like to get there?" A world-wide industry has grown up to satisfy the many different answers to these two questions. Concorde will fly you faster than you can shout, while you sleep or sip champagne. The belly of a Jumbo Jet could contain the whole of the Wright brothers' first flight. Modern airliners are truly magnificent machines which do more than even the most absurd of our ancestral aviators could have dreamt. And yet, when we sit on a porch in the sunshine and watch swallows dance through the air, it is hard to resist the thought that it looks so much more fun *without the airplane.*
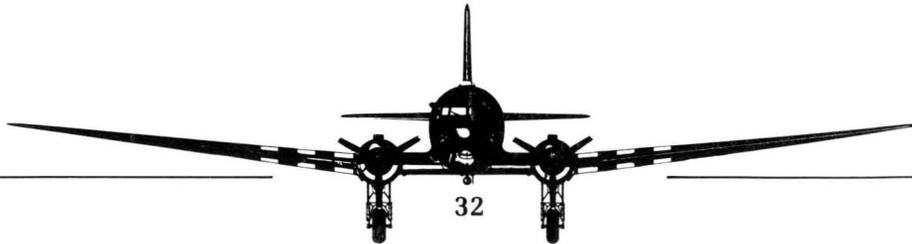
THE AIRLINE BUSINESS
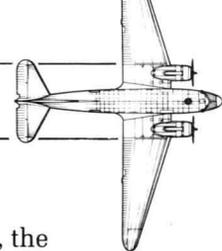
Regulations

Sadly, we are far from being as free as the birds. We can't just hop into a plane and head off for wherever we want to go. The airways are even more closely regulated than the ground is, and every aircraft and pilot have to satisfy a long series of stringent tests before they are allowed to take off. Moreover, once they do take off, they must exactly follow the flight path (which includes both route and altitude) that has been cleared for them by air traffic control, and constantly report their position at designated points along the way. For their part, air traffic control surrounds each plane with a slab of airspace 1,000ft above and below, 10 miles to either side and 10 minutes travel ahead and behind, into which no other aircraft is permitted to fly.

A Paris conference in 1919 and another in Chicago in 1944 established the right of every nation-state to control the airspace above its territory. From this there arose a complex network of bi-lateral agreements that allow aircraft to fly between two countries. These lay out which airlines may fly which routes, how many passengers they may carry and how much they can charge. In 1947, the International Civil Aviation Organization (ICAO) was established to ensure standards of safety and to maintain fair and effective competition. It is now a United Nations agency, based in Montreal, with 140 states as members. All of this made commercial aviation, as it gradually developed, into an international business, under the direct control of the national governments.

Just to add to the red tape, a trade association of airlines was established, by Act of the Canadian Parliament in 1945, called the International Air Transport Association (IATA). There is also a parallel body called the IACA for charter operators. These organizations set schedules, costs, fares etc. for each world region, so as to protect each route from becoming too cluttered. When one adds to all this the national civil aviation authorities who issue a spectacular array of licenses to operators, engineers, pilots, aircraft and airports, one can see that this is not a stress-free environment. It is not surprising then that in 1978, the US Congress passed the Airline De-regulation Act in an attempt to free up the system, at least within the United States.
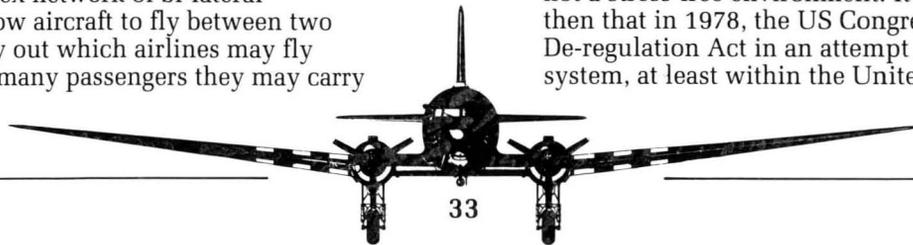
Perhaps it was inevitable that this totally new means of travel, which opened up so many possibilities and was growing so fast, would panic everyone into keeping a tight grip on it at first. Furthermore, it looked so unsafe. It is, of course, quite right to do everything possible to ensure safety, and the levels of safety achieved in aviation are a matter of pride for the whole business. Perhaps the question should be asked elsewhere why it remains so much safer to fly at the speed of sound at a height of 55,000ft than to walk across a street.

Economics

When you get down to brass tacks, there are an awful lot of brass tacks involved in commercial aviation. A single Boeing 747 Jumbo Jet can cost nearly $150 million, and that is before you even get it off the ground. Even a relatively small airliner with a capacity of 100 passengers or so might cost you about $45 million. At the end of the 1980s, British Airways had an order with Boeing for nineteen 747s and an option on twelve more at a total cost of $4.5 billion. In such an environment, if you get your sums slightly wrong, it can cost you literally millions of Dollars. If you get them right, on the other hand, the rewards can be impressive. In the year 1986-87, Singapore Airlines made a profit of $450 million.

Traditionally, an airline would purchase an aircraft and hold onto it for perhaps three quarters of its useful life - a modern airliner has a service life of about 25 years. During this time it would be constantly overhauled and thus gradually rebuilt. Eventually, it would be sold to a smaller airline, or one that was just starting out in the business. Many a gleaming airline flagship has ended its days as an old rust bucket flying mail to distant jungle outposts (although jungles hardly have the runway facilities for modern jet airliners!). Nowadays it is becoming increasingly common for airlines to lease aircraft from each other and so avoid having to find large capital sums for a full purchase.

Either way, with such extraordinary sums of money involved in acquiring a single piece of equipment, time on the ground for an airliner is money down the drain. The Lockheed TriStar is designed to be unloaded, cleaned, checked, refueled and reloaded within 30 minutes. When it lands, it is assaulted by a swarm of up to fourteen service vehicles. Moreover, since time on the ground is time wasted, short-haul flights are much less profitable than intercontinental ones. Whether you have flown thousands of miles or merely from a neighboring city, you will probably spend about the same amount of time at the airport
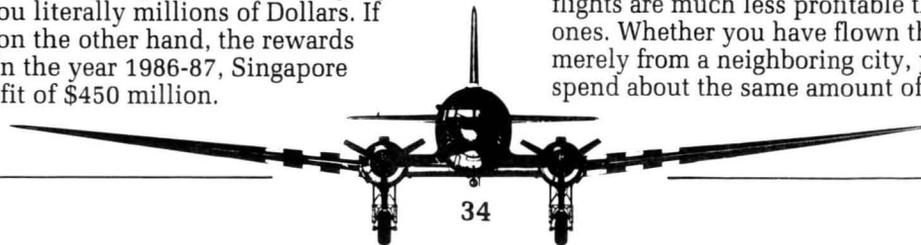
and be charged the same landing fees. Thus, the shorter your flight the, larger the proportion of your time is spent on the ground, going nowhere.

Moreover, if you are going to fly your highly expensive jet halfway round the world, you make every effort to ensure that it is as full as you can possibly make it. Most airliners come in a variety of versions, some designed to carry passengers and others outfitted to handle cargo. However, one way of filling up an aircraft is to fly with both cargo and passenger loads. Consequently, models which can be converted quickly from one to the other, with passenger sections contained in movable modules, are becoming more and more popular. These so-called 'Combis' or 'Convertibles' are particularly useful for smaller airlines and on less busy routes. When it comes down to it, if an airline is unable to fill its aircraft, it may be more economical to lease some of them to someone who can.

Range of services

It goes without saying (but we are going to say it anyway) that there are a whole range of very different activities that an airline can indulge in, from air taxis to intercontinental freight carriage. Many airlines specialize in a limited number of services and are thus able to maintain a compact fleet of suitable aircraft. Virgin Atlantic, for example, only flies 747s across the Altantic. The bigger an airline gets, the more likely it is to offer a wide range of services, simply because it is likely to have expanded by taking over other airlines and their services. Some, like Aeroflot, show off by doing absolutely everything.

Most airlines would probably start by flying a couple of aircraft on a single route and then expand to provide a specific regional service. Thus Alaska Airlines links 30 Alaskan cities with the west coast of the United States, AirCal provides a scheduled passenger service within California and the recently incorporated Presidential Airways links Washington DC with other parts of the eastern United States and provides a feeder service for United Airlines. This can develop into a full domestic service, such as those provided by Ansett Airlines in Australia or British Midland. Alternatively, one might aim at a particular group, such as commuters, and link key domestic cities with neighboring countries, as do Air Vendee in France and NFD in Germany.
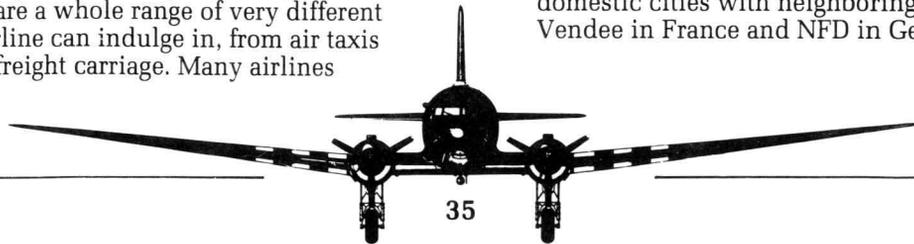
Many airlines do not bother themselves with the niceties of flying passengers and concentrate instead on carrying cargo. Examples of this would be Challenge Air Cargo flying between Miami and Central America, Martinair Holland and Cargolux Airlines International (an international cargo carrier from Luxembourg). Of course, cargo is much more space-efficient than passengers; it doesn't need room to walk up and down, go to the toilet or be fed (one hopes). From a position in the 1950s where hardly any cargo went by air, 30 million ton miles were being carried a year by the 1980s. Nowadays, it is all very high-tech and automated, with cargo carried along rollers in special containers shaped to fit the contours of the aircraft's hold.

The next best thing to shipping cargo is shipping passengers in bulk. A charter service, where a ready-made group of passengers (usually organized as a tour by a travel agent) simply hires your aircraft, can be much more economical than a scheduled service, where you may be forced to fly with a nearly empty plane if not enough people happen to want to travel when you are offering. With a charter flight, any passenger shortfall is borne by the tour operator (although this is often the airline itself) and if not

enough people sign up, you don't fly. Airlines such as Brittania Airways and Lauda Air exist almost entirely to carry vacation charters, and many others include charter flights in their overall service.

Many of the smaller operators, as well some of the big state-owned airlines in less developed countries or those with remote areas, include some very specialized activities in their repertoire. These might include crop spraying, air taxis, aerial surveying, flying doctors or pleasure flights. Comair in South Africa flies tourists off on safari and Norvig in Scandinavia operates an air ambulance service alongside its normal domestic operation. Services such as the Highland Division of British Airways can provide a vital lifeline to remote communities,
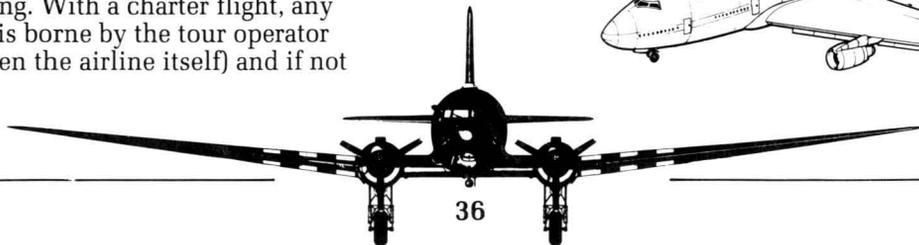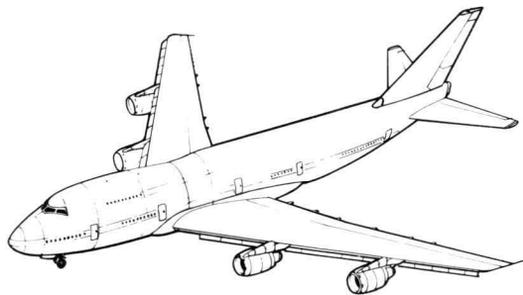
delivering the mail, newspapers and supplies and carrying away perishable produce and hospital patients. Mail delivery played an important part in building up many of the big American airlines.

However, the big money is mostly to be made on international routes, not least because it is more profitable to fly longer distances and the further you fly (if it is not stating the obvious), the more likely you are to leave the country. Moreover, most of the airlines that people have heard of are international carriers simply because domestic airlines, by their very nature, are only well known within their own country. The more well known you are, the more likely people are to want to fly with you. An Englishman on holiday in America is going to be much happier flying TWA or American Airlines than he would flying Budchuckandandy Air Services, however good Bud, Chuck and Andy might be at flying!

In commercial aviation, there does seem to be an advantage in being big. While there are small airlines doing very well by filling specific niches, they are inevitably vulnerable to that niche disappearing. There has always been a tendency for small airlines to merge or be taken over, forming ever larger

operators. If a company is doing well and wants to expand, one of the better ways of doing it is to take over a rival, thereby acquiring new routes along with the necessary planes etc. to take advantage of them. Simply buying new planes without routes to fly them on can be fatal, unless there is a dramatic surge in the demand for the routes that you are already flying (see Epilogue: The Story of Laker Airways).

Another advantage in being big is that you have more political and financial clout on the international stage. You stand a better chance of surviving bad times and have a greater capacity to take advantage of the good times, ordering the latest equipment and selling your old models down the line. However, the other way to acquire clout and financial security is to become nationalized. Nowadays every nation-state needs to have a reliable air link to the outside world. The safest way of ensuring that is to have your own national carrier, flying the flag and being owned or controlled in some part by the government. Many national airlines have been formed by nationalizing a private company that was down on its luck.
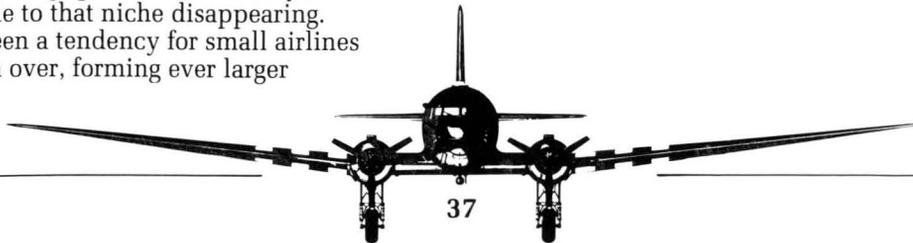
AIRLINES OF THE WORLD
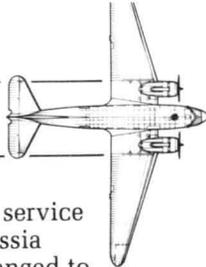
Perhaps the best way of getting a picture of the world airline scene is to look at a few selected highlights. The following are not necessarily the most important airlines in the world, nor do they typify every kind of company, but we hope they will be of interest nonetheless.

Aeroflot is the state airline of what was once the Soviet Union and is by far the largest carrier in the world, although it seems likely that it will break up as the Soviet state itself reverts to its component parts. As well as the usual passenger and freight services, Aeroflot performs a myriad of tasks including agricultural work, ice reconnaissance, forest fire patrol and an airborne medical service. Employing half a million people and carrying 110 million passengers each year over a route length of over a million kilometers, it really is in a different league to everybody else.

It was formed in March 1923, operating a service between Moscow, Georgia and central Russia under the name of Dobrolet. This was changed to in 1929 when it merged with a Ukrainian airline and Dobroflot then to Aeroflot in 1932. During the thirties it concentrated almost entirely on its domestic route network, breaking out a bit after 1958 and introducing its first transatlantic service in 1963. By this time it had absorbed the last of its divisions, Polar Aviation in 1960.

Avianca (Aerovias Nacionales de Colombia) is the oldest airline in the Americas and can boast the world's longest unbroken record of scheduled operation. Formed in December 1919 by a group of German and Columbian businessmen, it started a scheduled service between Bogota and Barranquilla in 1921, flying Junkers F13 seaplanes. In 1931, Pam American acquired an 80% shareholding, which was finally purchased back in 1978. It gradually merged with and absorbed other domestic operators, taking the name Avianco in 1940 and launching its first jet service in 1960, with help from Pan Am.
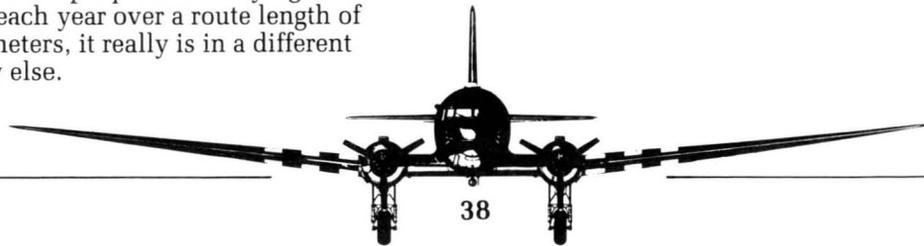
Air Afrique was formed by the Treaty of Yaounde in March 1961 by 11 former French African colonies and two French airlines, Air France and UAT. It took over the routes which had hitherto been operated by the French airlines and from them leased Boeing 707 and DC-8 aircraft with which to start services in August 1961. It now links 22 countries with Europe and the United States and is the biggest carrier in black Africa.

Air Lanka is a relatively small airline by international standards, having a fleet comprised (in 1986) of two Boeing 747-200s, two L-1011 Tristars and a 737-200. It nevertheless employs over 3,589 personnel and links Sri Lanka with a range of destinations through out Asia, the Middle East and Europe. The national carrier of Sri Lanka, it was formed in 1979, initially with the technical assistance of Singapore Airlines, to replace Air Ceylon which had shut down a year earlier.

Alia - the Royal Jordanian Airline was established by royal decree in December 1963 and sports a handsome dark green livery with a golden crown high on the tail fin. It immediately started services to neighboring Arab countries with a leased DC-7,

starting jet operations in 1965 to Paris and Rome. In July 1977, it became the first Middle Eastern airline to undertake a transatlantic service, using a 747-200. It has a number of subsidiaries operating cargo, air taxi, medical and executive jet charter services, as well as having hotel and other travel interests.

All Nippon Airways, like so much of the Japanese economy, has grown remarkably quickly over the last few decades, and is now the largest airline in Japan, although most of its operation is domestic or to regional destinations such as Hong Kong, Beijing, Manila and Singapore. The company started life as the Japan Helicopter and Aeroplane Transport Company, with a service between Tokyo and Osaka in 1952, becoming All Nippon Airways in 1957. Since then it has absorbed and merged its way to its current position, starting an international service to Los Angeles and Washington in 1986.
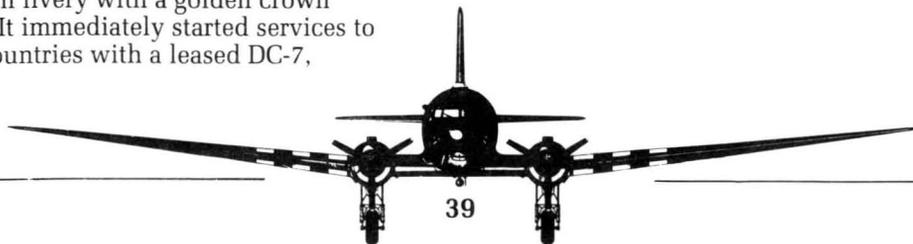
◢ British airways

British Airways flies over more unduplicated route miles than any other airline in the world, even more so since it took over British Caledonian Airways in 1988. It was assembled by the 1971 Civil Aviation Act out of the range of subsidiaries owned by BOAC and BEA. BOAC (British Overseas Airways Corporation) was itself formed in 1940 by an act of parliament that merged Imperial Airways (which had a history dating back to 1924) and a pre-war British Airways. In 1946, the nationalized BEA (British European Airways) was formed to take over the European routes of BOAC as well as a number of other domestic airlines. In 1949, BOAC also absorbed British South American Airways. In 1952, BOAC became the world's first commercial jet operator and a year later BEA produced the first turboprop service.

British Caledonian Airways arrived on the scene in 1970 when Caledonian Airways, an international charter airline formed in 1961, took over British United Airways. In 1976, a government civil aviation review caused BCal to exchange its East African routes with British Airways' South American ones. Then in 1984, again following a government review document, the South American routes returned to BA in exchange for routes to Saudi Arabia. Despite having greatly increased its North American and Far East network during the late seventies, by 1987 BCal was in difficulty and ready to be taken over by BA, despite the deal being portrayed as a merger. Since both airlines had a whole range of subsidiaries, the resulting group is a very impressive, and now privatized operation.

CAAC (The Civil Aviation Administration of China) was formed in 1949 with the advent of the People's Republic, and controls all civil aviation in China, much like Aeroflot in the old Soviet Union. Like Aeroflot, CAAC initially concentrated on its domestic routes (with the exception of flights to the Soviet Union), only introducing jet operations in 1970 and services to Toyko and Paris in 1974. Again like Aeroflot, CAAC performs a range of functions that do not fall within the mainstream of airline activity, such as crop spraying and an airborne medical service.
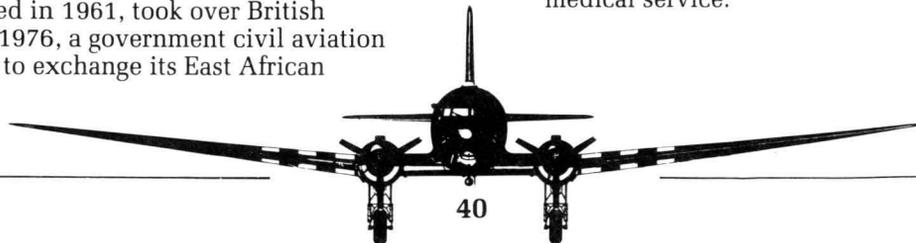
Cathay Pacific Airways is unusual among the worlds major airlines (outside the USA) in remaining a private company, 70% of it being owned by Cathay Holdings and the remainder by the Hong Kong and Shanghai Banking Corporation. Founded in 1946 with services between Australia and Asia, it gradually expanded to absorb Hong Kong Airways in 1959. Thus based in Hong Kong, it now carries passengers and cargo throughout the Far East, as well as Australia, India and Europe. It flies a lot of Boeing 747s, its fleet consisting in 1986 of 16 747s of different versions and 9 Lockheed TriStars.

Dan-Air, despite appearances to the contrary, has nothing to do with Denmark. It is named after the British shipping brokers, Davies and Newman Ltd., by whom Dan-Air was formed as a subsidiary in 1953. Today, the airline operates a extensive scheduled domestic service as well as charter flights, such as carrying overnight mail and ad hoc cargo shipments. It also flies to Europe, in particular operating package-deal vacation charter flights throughout the continent and the Mediterranean both from British airports and from Berlin.

Ethiopian Airlines was established by proclamation of Emperor Haile Selassie on Boxing Day (December 26), 1945. It was launched a few months later with a fleet of five DC-3s, with TWA providing technical assistance until 1970. Inevitably, it first concentrated on building up its domestic and regional network, before starting a scheduled service to Frankfurt in 1958. The company now operates all over Africa, as well as to the Middle East, Europe and even Bombay and Beijing.

Ghana Airways Corporation is another minnow in the airline world, with a fleet consisting (in 1986) of a DC-9, a DC-10 and a couple of Fokker F28s. As such, it mainly provides a domestic service and a link with neighboring African countries, although it does manage to fly to Dusseldorf, London and Rome. Formed in 1958, it was an associate of BOAC until 1961, before being taken over by the government to become the national carrier.

Iraqi Airways was founded after the Second World War as a subsidiary of the government-owned Iraqi State Railways, and was soon flying DC-3s to a number of Middle Eastern destinations. BOAC provided technical assistance until 1960, when the airline separated from the state railways. Five years later it started flying jets to London, and over the next decade underwent an extensive refit with Boeing aircraft. Bearing in mind the strong links between Iraq and the Soviet Union, it is not surprising that its fleet also contains a large number of Soviet-built aircraft.

KLM-Royal Dutch Airlines is the oldest airline in the world that it still operating with its original name, having been established on October 7, 1919. Its service between Amsterdam and London, which started on 17th May 1920, was and is the first and oldest air route in the world. Over the years, it gradually extended its network all over Europe and to the East Indies (1929), the West Indies (1935), South America (1946), South Africa (1947) and Australia (1951). It was the first European operator of the DC-3 in 1937, also of the DC-8 (in 1960), and the first European airline to fly to America after the Second World War.

Lufthansa is one of Europe's largest airlines, serving over 130 points in nearly 80 different countries. It is largely owned by the Federal government, with the State of North Rhine-Westphalia and the state railways also holding large shares. Its forerunner, DLH (Deutsche Luft Hansa), which could trace its roots back to a domestic service in February 1919, was abolished at the end of the war as part of the Allied ban on German aviation. It was reformed in 1953 as Luftag, but had reverted to the name Deutsche Lufthansa AG (Lufthansa for short) by the time it started scheduled services in 1955.
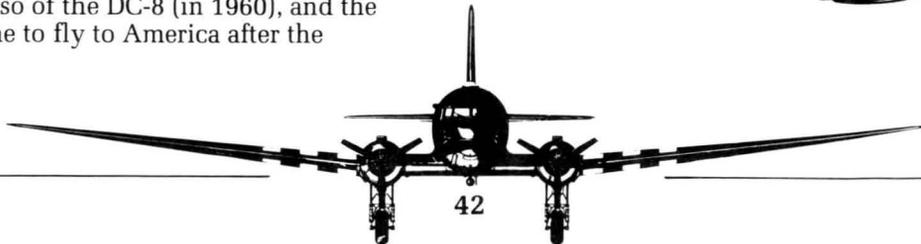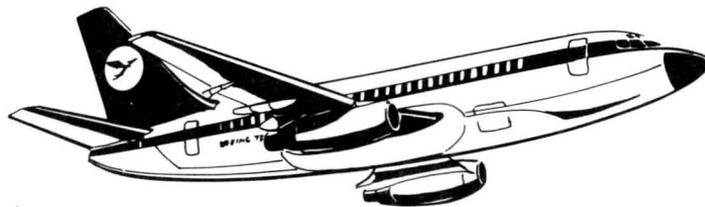
Mexicana, initially formed in 1921, is the fourth oldest airline in the world and the second oldest in Latin America. Its main function in the early days was to fly payrolls to remote oil fields, so as to avoid them being stolen en route by bandits. It signed an air mail contract in 1926 and started carrying passengers a couple of years later. From 1929 to 1968, Mexicana was owned by Pan American, although it retained its own identity. Today, in addition to its domestic network, the carrier flies to a number of US destinations.

Qantas started out in 1920 as The Queensland and Northern Territory Aerial Services, Ltd. - hence the name. Formed by a couple of ex-flying corps Lieutenants, W. Hudson Fysh and P.J. McGuiness, they flew an air taxi service and pleasure flights in a couple of planes. Scheduled services within Queensland began in 1922 and expanded to include a flying doctor service. In 1934 it merged with Imperial Airways (BOAC) to start international flights and in 1947 was purchased by the Australian government. In 1958, Qantas became the first airline to provide a regular round-the-world service.

Turk Hava Yollari was founded by the Turkish government in 1933 as the state airlines, but it took a little while to decide who should run it. It started at the Ministry of National Defence, transferred to the Ministry of Public Works in 1935 and then to the Ministry of Transportation in 1938. Finally, in 1955 a separate corporation was set up to run air transportation which assumed the current name. Today, the government owns 99.9% and the carrier flies to a number of European and Middle Eastern cities, as well as operating the domestic network.

AIRLINES IN THE UNITED STATES
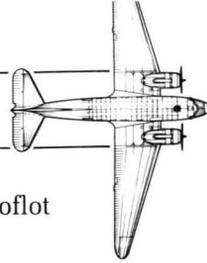
Because there are so many of them, because some of them are so huge, and because they are all privately owned, the United States airlines almost form a category of their own. Most countries who are wealthy enough to contemplate air travel as a regular way of getting about, are geographically small enough for road and rail to compete successfully. For most countries, air travel is for wealthy executives and for international vacationers. As such, there is not the kind of market that can sustain many airlines, and the large ones that are there are nearly all owned and maintained by governments as part of their international responsibility.

The United States however is so huge that even travelling to 'nearby' states takes long enough for the speed of air travel to make it competitive. For comparison, a European trip worthy of flight, say, from England to Rome, is as far as the distance from Chicago to Dallas! Thus it is clear that Americans have a much greater need for a large domestic air service. All sorts of activities, such as delivering the mail, domestic trade or visiting the in-laws, use U.S. air carriers. The airlines have effectively taken over the role that railways play in other countries. Both China and the old Soviet Union are large enough to have an extensive domestic air network, but both

have large state airlines (CAAC and Aeroflot respectively) to run things.

There are, of course, other large countries such as Brazil, India and Sudan which, all things being equal, might be expected to use air travel to get about. To a certain extent, of course, they do, but things are far from being equal. Not only do such countries not have the wealth, and in particular the private capital, to support large numbers of airlines, but they also do not have an economic infrastructure that creates a need for their citizens to travel quickly all over the country. Most are either tied to their farmland or live in the cities where, if they have a job, they are tied to their factory. Such private airlines as there are tend to be small scale operations, using small and often out-dated aircraft to perform specialized tasks and charter flights.

By stark contrast, in America, the land of free enterprise, airlines are big business and the larger ones have expanded to the point where they are world-scale international carriers. The companies even seem to be competing to claim the biggest name, so that not only do we have the comparatively reserved **Northwest Airlines, Western Airlines, Eastern Airlines, Southwest Airlines** and **Pacific**
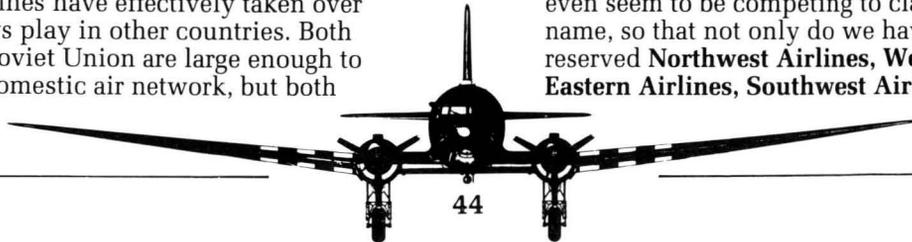
Southwest Airlines, there are **American Airlines** and **USAir** (neither of which is the national carrier) as well as **Continental Airlines, United Airlines**, and **Presidential Airways** (nothing to do with the President) and even **Pan American World Airways** (sadly no more), **World Airways** and **Trans World Airlines** (now part of USAir).

Most if not all of these big airlines were formed in the twenties and thirties, in the earliest beginnings of air travel. They have built themselves up by merging and taking over smaller companies, literally hundreds of which were founded by enterprising pioneer businessmen and aviators. The large carrier **Braniff**, which had a fleet of 22 Boeing 727s in 1986, was started by Tom and Paul Braniff in 1928 flying between Tulsa and Oklahoma City. With the sheer number of Americans trying to exploit different niches in the burgeoning airline business, it is not surprising that the two oldest and biggest aircraft manufacturers, Boeing and Douglas, are both American companies.
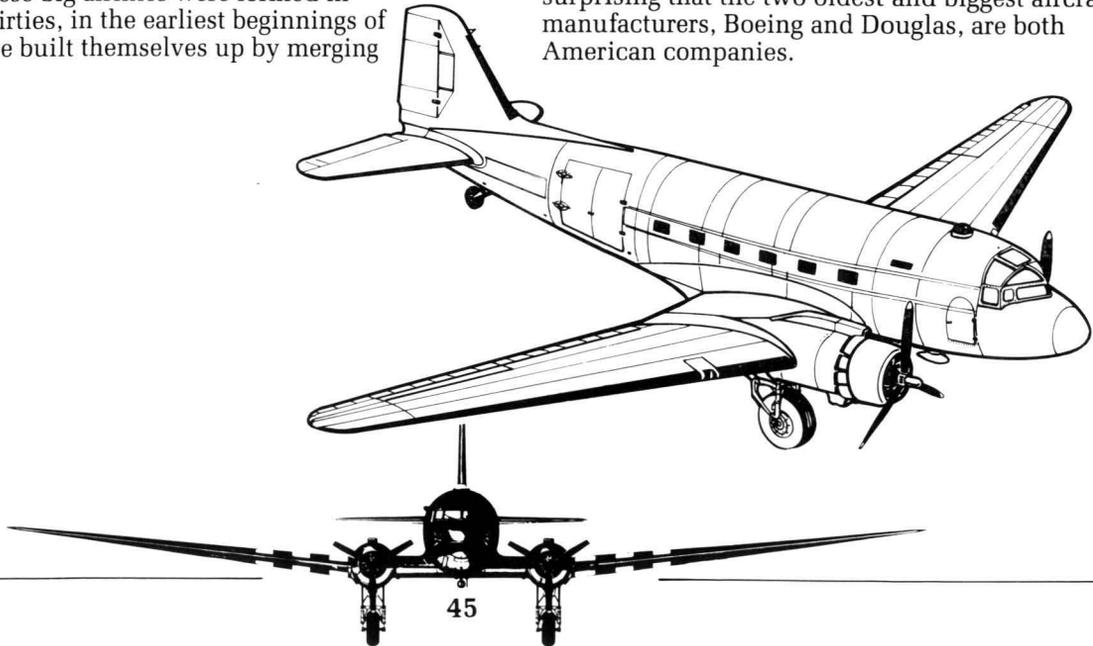
PAN AMERICAN
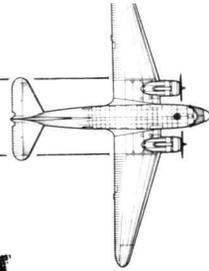
An important lesson for the prospective American airline-owner might be drawn from one of Air Bucks' real-life counterparts. Pan American (**Pan Am** for short) began as a wish in the heart of World War I flyer Juan Trippe. Different than most airlines forming at that time, he planned to use his imagined airline to reach beyond America, and connect her with countries around the world. With perseverance, he was able to get airmail contracts that established footholds for Pan Am all across the international market. At its peak, the airline operated the finest luxury flights across the Atlantic, and its Clipper planes were the first to establish routes across the Pacific.

However, this international outlook, followed to an extreme by Trippe, began Pan Am's downfall. While Pan Am held exclusive rights to its overseas routes, it flourished. But after World War II, other airlines began to appear in those areas, and Pan Am was forced to fight for its once-unchallenged territory. A bid in 1966 to bolster the fleet with several modern aircraft was undone by a sharp rise in oil prices seven years later, hurting the company such that it never fully recovered, even though it regained control of the European market.

The final nails in Pan Am's coffin were the explosion of Pan Am Flight 103 over Scotland, and the Gulf War. The terrorist attack shattered consumers' faith in transatlantic air travel, and the market diminished. Overseas flights to Europe were then further curtailed by the war in the Persian Gulf, which also brought further threats to plant bombs on planes carrying Americans to Europe. Under these circumstances, Pan Am had no choice but to prepare to go bankrupt.

To the game player, the history of Pan Am should act as a reminder of the need for careful route selection, as well as for vigilance towards the general capriciousness of the world market.
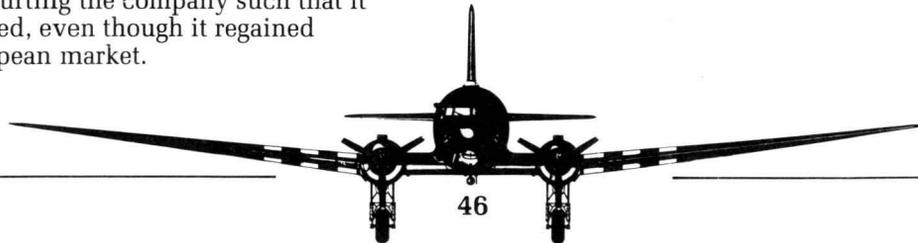
THE AIRLINERS THEMSELVES

While airline companies compete to bring in more and more passengers and cargo, manufacturers are also struggling with each other to develop slightly bigger and better and more efficient machines to satisfy burgeoning demands. It is truly remarkable the pace at which aircraft development has gone. In the space of a single lifetime, we have gone from the Wright brothers to Space Shuttles and beyond. In many ways, airline companies can only improve and develop their services, as aircraft become available which are capable of doing more. The spectacular growth of the business has had as much to do with the manufacturers as with the airlines. The history of aviation is about what became possible.

The **Douglas DC-3** owes much of its success to the coming of the Second World War. It first flew on 17th December 1935, the 27th anniversary of the Wright brothers' famous flight, and was thus poised for mass production as war broke out. While 430 had been built by the outbreak of hostilities and 28 more delivered after peace was declared, wartime production numbered upwards of 10,200 (thousands more were made under license by the Soviet Union). Many of these military versions, known as 'Dakotas' by the RAF and 'C-47 Skytrains' by the USAAF, later found their way into civil airlines and over 300 were
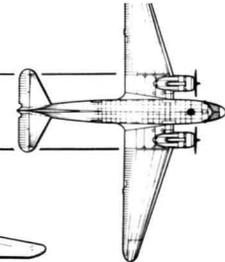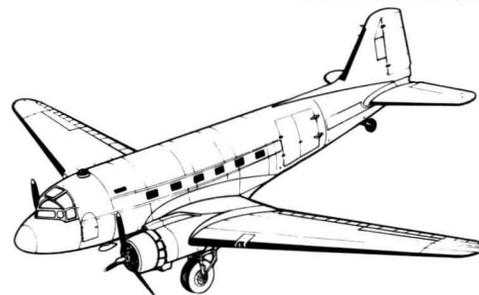
still in service at the end of the 1980s. For 20 years after 1945, the DC-3 was the workhorse of the airline industry and few companies did not have at least one stashed away somewhere in their fleet.

With a cabin length of 30ft, it typically carries 28 or 32 passengers four-abreast with a central aisle (or 16 sleeping berths). Its two Pratt and Whitney piston engines give it a cruising speed of 143 knots at 6,000ft, a ceiling of 21,900ft and a range of 305 nautical miles with a full 6,600 lb payload.

The **Douglas DC-4** was the first four-engined airliner that Douglas produced, but it did not have the same wartime use as the DC-3 and work was soon underway to produce its bigger and better successor, the DC-6.

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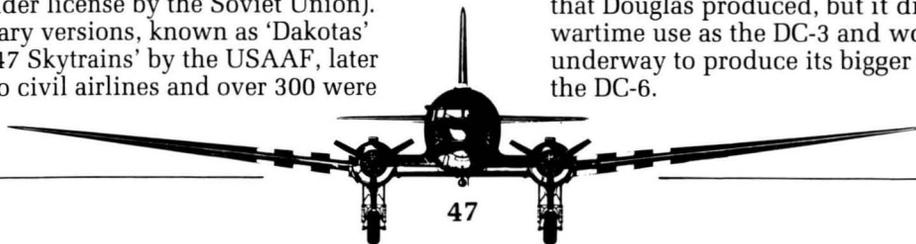
The **Douglas DC-6** was designed with half an eye on possible military use, but in fact it did not fly until after the war; in the end only one presidential transport, the C-118 'Independence,' was supplied to the military. Nevertheless, it proved to be a success in its civil guise, and was widely used on regional routes all over the world and particularly within the United States. 74 all-cargo DC-6As were built and 288 passenger-carrying DC-6Bs as well as a number of DC-6Cs which could be converted for either passenger or freight payloads. The DC-7 was slightly bigger and capable of US transcontinental and transatlantic flight but in fact fell out of service more quickly than the DC-6, some 60 of which were still flying commercially in 1986.

The DC-6 has four Pratt and Whitney piston engines and a maximum payload of 24,565lb. It has a cruising speed of 235 knots at 20,000ft and range of 1,650 nautical miles. Its 68ft 9in cabin can seat 82 passengers, five abreast.

The **Vickers Vicount**, which first flew in July 1948, was the world's first turboprop airliner and is the United Kingdom's most successful commercial aircraft production program. It is powered by four pencil-thin (or at least crayon-shaped) Rolls-Royce Dart engines and as subsequent versions of the engine increased in horse-power, so the capacity of the Vicount increased from 24 to 71 passengers. There have been many different versions of the original VC2, through the 700 and the 800 series, and by 1964 when production ended, 444 had been built. The final deliveries were to the Chinese airline CAAC and were the first Western equipment that the airline acquired. Around 40 are still in use, including those used by Virgin Atlantic Airways to ferry passengers to and from its Gatwick operation.

The Vicount 800, one of the later versions, has a cruising speed of 269 knots at 20,000ft, a maximum payload of 13,224lb and a range of 565 nautical miles. Although the maximum capacity of the 54ft cabin is 71 passengers, a more typical arrangement has 47 tourist seats, five abreast and 12 first-class seats four-abreast.
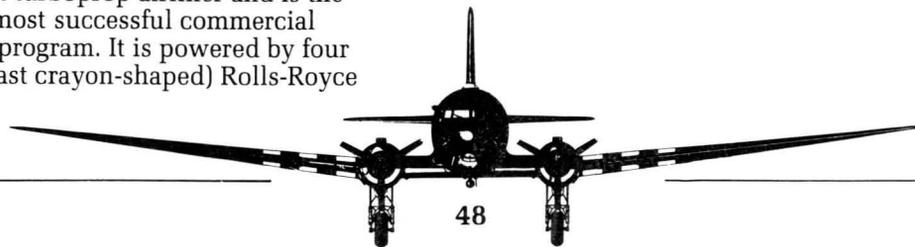
The **Boeing 707** introduced the world to the swept-wing airliner and was the first jetliner that the company produced (although the de Havilland Comet was the first jet airliner in service). In fact, Boeing gambled its very existence on developing the 707 but the pay-off was handsome. 820 were sold to the military (mainly as tankers and reconnaissance aircraft) and they still manufacture the E-3 Sentry 'AWACS' early warning radar aircraft, which uses the same airframe. In addition, 992 slightly wider commercial models were produced, in a range of different versions. The 707-120 and -220 were domestic models seating up to 180 passengers, while the -320 and -420 were longer and capable of intercontinental flight carrying as many as 219 passengers. The 707-320C, the final and most popular version which first flew in 1963, is convertible between passenger and cargo usage.

Four Pratt and Whitney turbofans power the 707-320C at a long-range cruising speed of 464 knots at 35,000ft for up to 5,000 nautical miles with a full fuel load or 3,150 nautical miles with a cargo payload of 80,000lb. The 111ft cabin is typically arranged to provide 14 first class seats four abreast, with a four-seat lounge and 133 tourist class seats six abreast.

The Boeing 720, which first flew at the end of 1959, was a short/medium range version of the 707, based on the 'short-body' version of the original 707-120.

The **Lockheed Electra** was developed to satisfy American Airlines' desire to run its US domestic routes with a turboprop aircraft that had a greater passenger capacity than that of the Vickers Vicount. At the time (in the mid to late fifties) it was believed that turbojets would not be able to compete with turboprops over medium ranges. As it became obvious that this was not actually the case, the market for the Electra disappeared with the result that it turned out to be the first and last such aircraft to be produced in the United States. Sales were not helped by the discovery of a slight (but twice fatal) design fault, which had to be corrected.
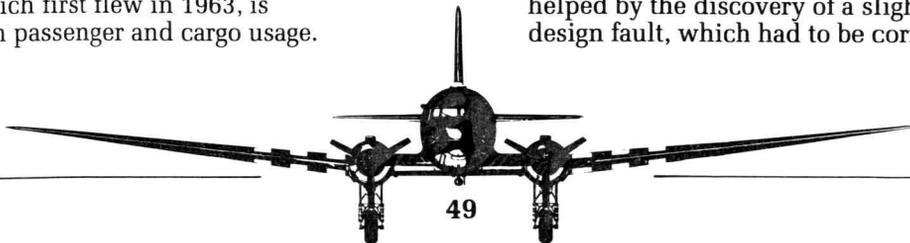
Nevertheless, 170 were produced before production stopped in 1962 and perhaps 70 still carry cargo in North and South America.

The L-188A Electra has a 76ft 5in cabin which can be arranged for 16 first-class seats, four abreast and 51 tourist-class, five abreast, or 85 one-class seats, five-abreast. You can even squeeze in 98 seats, six-abreast. It has four Allison turboprops, which give it a range of 1,910 nautical miles with a maximum payload of 26,500lb and a maximum cruising speed of 352 knots at 22,000ft.
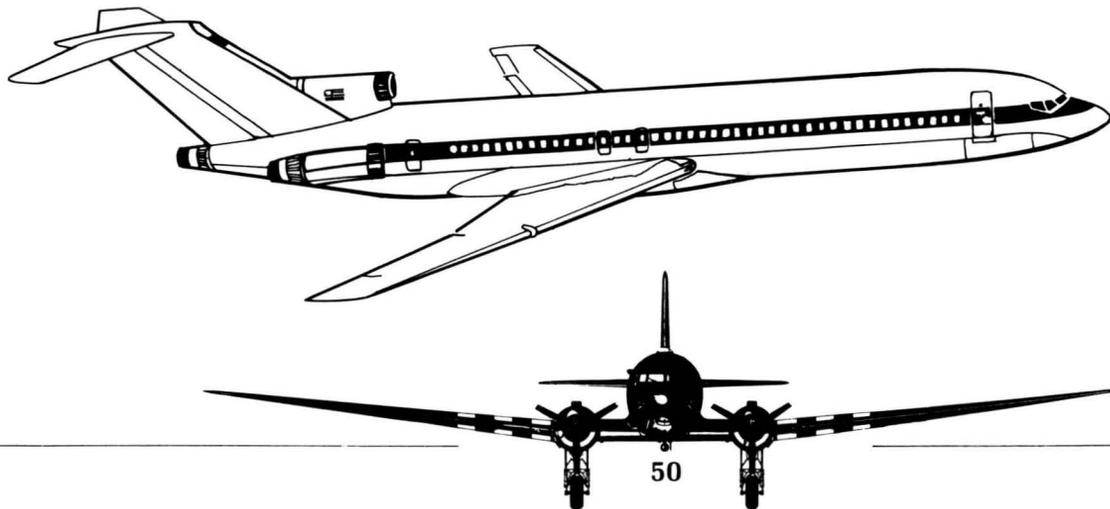
The **Douglas DC-8** was developed to emulate the expected success of the Boeing 707 and closely resembles it, although its wings are slightly less swept back. By the time it made its first flight in May 1958, 142 were already on order. In 1961, it was the first jet airliner to exceed the speed of sound, achieving Mach 1.012 in a shallow dive. As with the 707, many different versions were produced, the Series 10 and 20 being for domestic use and the Series 30 and 40 for intercontinental flight. The Series 50 formed the basis for the Jet Trader, specifically modified for carrying cargo, with a side-loading freight door, a reinforced floor and other provisions for cargo handling. The Super 60 Series, which arrived in 1966, had a stretched fuselage and number of aerodynamic improvements, as well as being offered in both convertible and all-freight versions.

In total, 556 DC-8s had been made by the time production stopped in May 1972, although 110 of the Super 60 Series were further refined between 1981 and 1986, with new engines, as the Super 70 series. The final version of the DC-8 is the Series 73, with four CFM International turbofans and a cruising speed of 479 knots at an altitude of 39,000ft. It has a range of 4,830 nautical miles carrying its maximum passenger pay load of 269, seated six-abreast with a central aisle along the length of its 138ft 6in cabin.

The **Boeing 727** was intended as a smaller, short-haul version of the 707, and its development was well under way before the 707 took to the air. The two were designed to have as much commonality as possible so that cabin layouts and accommodations would be similar. Aerodynamically, the 727 was the most advanced airliner of its day with a 32 degree wing sweep-back. Rather than having its engines mounted on its wings, the 727 is powered by three Pratt and Whitney turbofans, two in pods mounted on the sides of the rear fuselage and one in the rear fuselage itself. It also has its tail wings mounted at the top, rather than the bottom, of the tail fin (called a 'T-tail'). In July 1967, a longer version with a seating capacity of 189 was launched, called the 727-200, and this became the standard model.

Sales took off and eventually 1,832 Boeing 727s were produced, including 1,245 Series 200s, at the time making it the best selling civil airliner in the world. The final model, the 727F, was a pure freighter with no cabin windows, the last one of which was
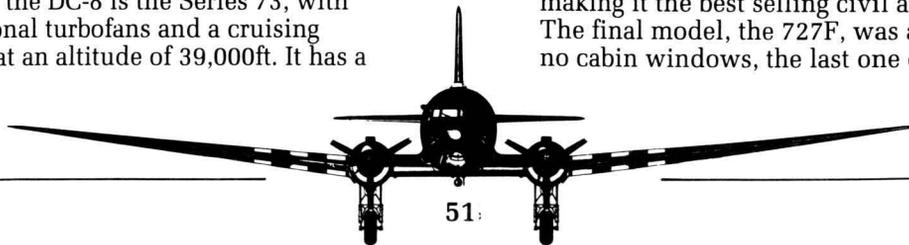
delivered to Federal Express in September 1984. The 727-200 can cruise at a speed of 530 knots at 25,000ft, or 467 knots at 33,000ft for longer range travel. It cabin is 92ft 8in in length, and usually seats 14 first-class passengers, four-abreast and 131 tourist-class, six-abreast.
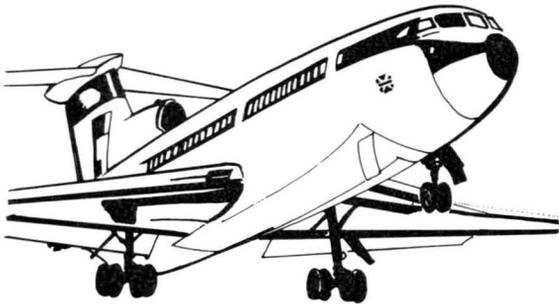
The **British Aerospace Trident** started life as the de Havilland 121 and has a very similar configuration to the Boeing 727. Nevertheless, despite pre-dating it by a few months, the Trident never achieved anything like the success of its American counterpart. It was, however, the first airliner to be certificated for the use of an automatic landing system in passenger service. A series of refinements kept the aircraft in production for a while but only 117 were constructed. Many of them saw service with BEA (and then British Airways) in the sixties and seventies, but British Airways stopped using Trident at the end of December 1985 and today most of those still flying are based in China.

The most popular version was the Trident 2E, 50 of which were made. Powered by three Rolls-Royce turbofans, it has a typical cruising speed of 525 knots at 27,000ft and a range of 2,140 nautical miles. The 67ft 1in cabin is usually arranged for 12 first-class seats, four-abreast and 79 tourist class seats, six-abreast, although a one-class layout seats 97 and a high-density arrangement can fit in 132.

The **British Aerospace BAe 1-11** followed the trend of the day and is powered by two rear-mounted Rolls-Royce engines under a T-tail. However, faults with this configuration were vividly revealed when a prototype went into a deep stall and was lost in October 1963. Nevertheless, the modified 1-11 Series 200 and 300 entered service in early 1965, quickly followed by the Series 400, which is a version of the 300 adapted for American operators. Two years later,
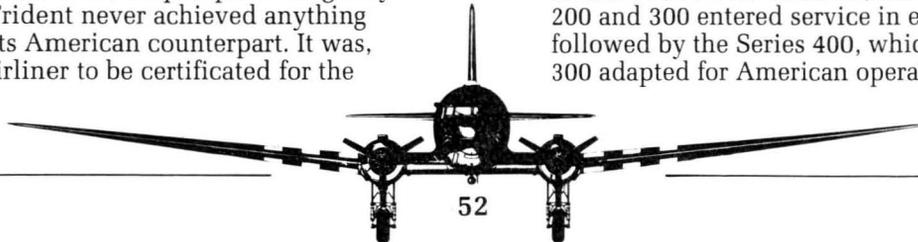
a stretched version called Series 500 emerged and in 1971, the flexible Series 475 combined features of both the 400 and the 500 to enable it to operate from rough dirt airstrips.

In all, 230 1-11s were built before an agreement with the National Center of the Romanian Aircraft Industry (CNIAR) switched production to Bucharest in 1979. Three complete aircraft were delivered, along with kits for 22 others in progressive stages of completion, and the 475 and 500 are now produced in Romania as the 495 and 560 respectively. The 1-11 500 has an economy cruising speed of 400 knots at an altitude of 25,000ft and a typical range of 1,480 nautical miles. It has a maximum payload of 26,418lb and its 70ft 4in cabin usually provides one-class seating for 119 passengers.

The **McDonnell Douglas DC-9** just kept stretching and stretching until it became the MD-80 which is described below. The original idea was to produce a scaled down version of the DC-8 but in the end a whole new design was developed using a T-tail and rear-mounted engines, much like the BAe 1-11. It was always intended that the fuselage would gradually be stretched and the 90-seat Series 10 of 1965 was followed by the 115-seat Series 30 a year

later, the 125-seat Series 40 two years after that and the 139-seat Series 50 in 1975. Convertible and all-freight versions of the Series 10 and Series 30 have also been produced as well as models for the military with wide cargo doors and facilities for medical patients.

With all this variety, it is perhaps not surprising that Douglas managed to keep production going for such a long time and of the 976 produced, only about 100 had been taken out of service by 1987. The DC-9 is powered by two Pratt and Whitney turbofans, with updated versions becoming available with the Series 50 which were sometimes fitted to the earlier models. The Series 30, of which 503 were sold, has a maximum cruising speed of 490 knots at an altitude of 25,000ft and a maximum payload of 31,000lb.

The **Lockheed L-100 Hercules** is a civilian version of the familiar C-130 military transport, and entered commercial service in 1965. In subsequent versions, the engines were upgraded and the fuselage lengthened and the final L-100-30, which first flew in 1970, accounts for about half of the 100 or so civilian Hercules that have been produced. The L-100 is very much a cargo-carrying aircraft with built-in handling facilities and roller conveyors, although
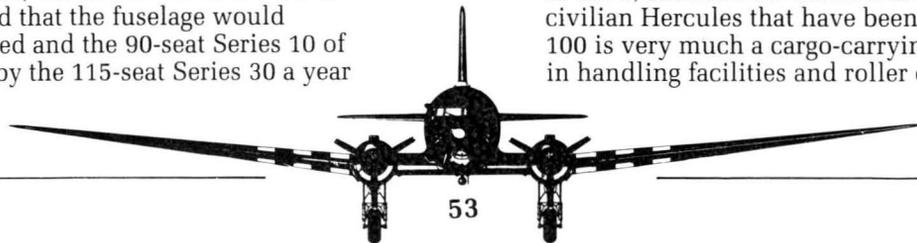
passenger-carrying modules can be fitted. Nevertheless, six operate in Indonesia carrying up to 128 passengers on transmigration flights.

The Hercules is powered by four Allison turboprops which give it a cruising speed of 300 knots and a range of 1,363 nautical miles carrying the maximum payload of 51,110 lb. It has a cabin length of 56 ft. and a total cabin volume of 6,057 cubic feet.

The **Boeing 737** is the smallest of the Boeing jets, of a similar size to the BAe 1-11 and DC-9, but with low-slung wing-mounted engines. It is also the best-selling jet airliner of all time, nearly 2,000 having been produced by 1989. The initial 737-100 entered service in 1968, but was followed within months by the slightly larger -200, which could seat 115 passengers, six-abreast. An improved version of the -200 appeared in 1971 and cargo, convertible and executive models (the latter of which is designated the 77-32) have been produced. While only 30 of the -100 were produced, well over 1,000 of the -200 had been sold by 1987. In 1984, the 737-300 arrived with less noisy and more fuel-efficient engines and a seating capacity for 149 passengers and is now out-selling the -200. More fuselage stretching produced the -400 with a capacity of 168 seats and a shortening gave the -500 with a capacity of 130, but with the improved engines.

The two Pratt and Whitney turbofans of the 737-200 give it a maximum cruising speed of 488 knots at 25,000ft and a standard range of 1,855 nautical miles. The CFM International turbofans of the 737-300 give it a cruising speed of 491 knots at 26,000ft and a standard range of only 1,390 nautical miles, although it should be remembered that the -300 is carrying 34 more passengers. The -200 has a maximum payload of 34,790lb, whereas the -300 can carry 35,420lb.
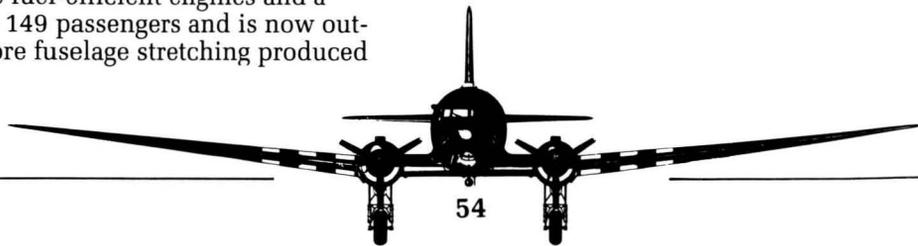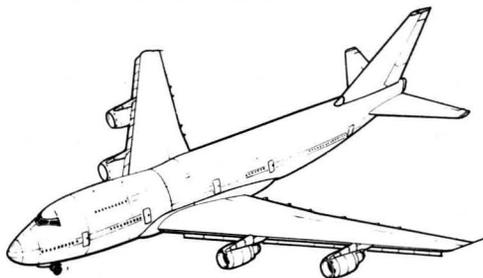
The **Boeing 747** or 'Jumbo Jet' was literally twice as big as any other airliner when it was launched at the beginning of 1970, and has never really had any competition. Boeing had to build a special factory, designed specifically to assemble it. The distinctive bulge at the front of the aircraft houses the first class seating on an upper deck, behind the cockpit, while the economy-class seats extend under the cockpit and right into the nose. The most common version is the 747-200, of which nearly 400 had been sold by 1987. It has been produced in both convertible and freight versions, with a hinged nose section that allows straight-in front loading. The freight version is automated to the extent that two men can load it with 140 tons in half an hour. In addition, the 747SP (Special Performance) has a shorter fuselage

(typically seating 288), and flies higher and farther than any other subsonic commercial aircraft. By 1987, over 750 Boeing 747s had been produced.

The 187ft cabin of the 747-200 has room for 6 galleys, 16 toilets and over 500 passengers, ten-abreast, although it more typically carries 32 first class seats on the upper deck and 420 economy-class seats below. As if that wasn't enough, the 747-300 emerged in 1982 (followed by the improved -400 in 1988) with an extended upper deck, which increases the capacity to 624, or can even be adapted to sleep 26 first-class passengers. Just to show off, Boeing have even talked of stretching the fuselage or extending the upper deck along the length of the aircraft giving a capacity of 1,000 or so. If you're that big, performance is almost secondary. Nevertheless, the -200 can cruise at 507 knots at 35,000ft and carry a 151,500lb payload. It can cruise as high as 45,000ft and has a range of 6,150 nautical miles with a full passenger payload.
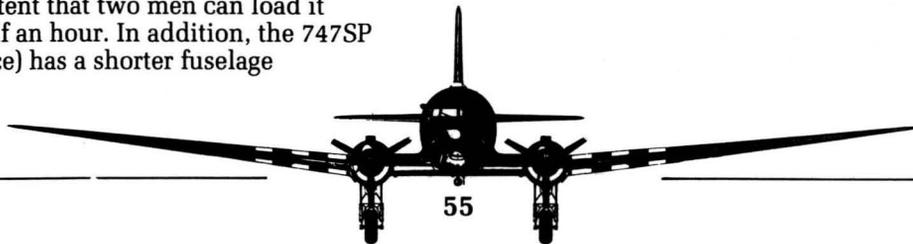
The **Lockheed L-1011** TriStar had a difficult birth. Rolls-Royce, which was producing its engines, went bankrupt in 1971, throwing the whole of the Lockheed company into jeopardy. Although Rolls-Royce was eventually saved by nationalization, the disruption to the production of the TriStar put it at a serious disadvantage to the rival Douglas DC-10, and in no position to match the developments of the Douglas aircraft. The L-1011-1 finally appeared in 1972, but the improved -200 did not enter service until 1977. In 1979, the -500 was launched with a shorter fuselage and a series of advanced aerodynamic features which gave it a very long range. Some of the 1011-1s were converted to carry the same engine as the 1011-500, but it was really too little too late. Only 250 TriStars were produced and not all of them had been sold when production was halted in 1984.

The L-1011-500 is powered by three Rolls-Royce turbofans, with the third engine incorporated more into the fuselage than in the DC-10. It has a range of 5,345 nautical miles and can cruise at 518 knots at an altitude of 33,000ft. With 122ft 5in long wide-bodied cabin, it can carry 330 passengers 10-abreast, or more typically 24 first-class six abreast and 222 tourist-class nine-abreast.

The **McDonnell Douglas DC-10** has gained a certain degree of notoriety after a number of crashes, but it is nevertheless a perfectly good aircraft at heart. Entering service in 1971, it is a wide-bodied three-engined airliner with the third engine distinctively situated in the tail fin, rather than in the rear fuselage. The original Series 10 was supplemented by the Series 15, designed to operate at high altitude and high temperatures with Mexican airlines. Longer range versions, called the Series 30 and Series 40 (which was the improved and re-named Series 20), followed in 1972 and after a number of refinements, the designation DC-10 Series 30ER (Extended Range) appeared in 1980. A convertible freighter and a pure freighter were also produced, Series 30CF and Series 30F respectively, as well as a few Series 10CF and 60 KC-10A Extender tankers for the USAF. In all, 442 DC-10s had been produced by 1987.

The DC-10 Series 30 is powered by three General Electric turbofans and has a range of 4,606 nautical miles carrying its maximum payload of 106,550lb. It cruises at 490 knots at a height of 30,000ft. Although its cabin is only 136ft long, it is wide enough to seat 10-abreast with two aisles, giving it a maximum capacity of 380. However, it usually carries 255-270 in a mixed-class layout.
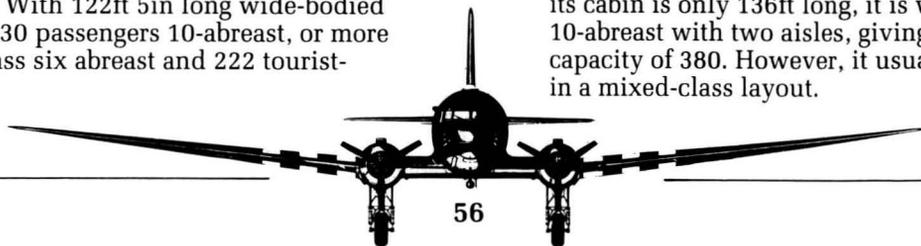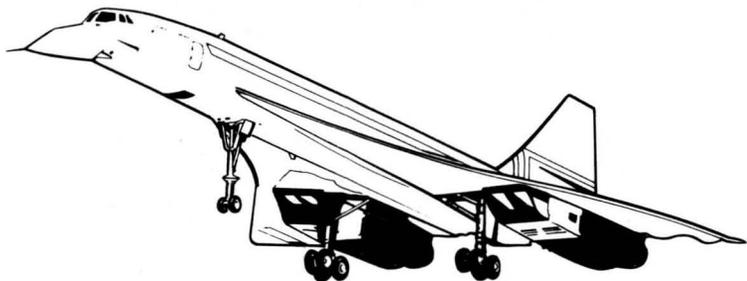
The **Aerospatiale/BAC Concorde** is probably the most glamorous airliner in the world simply because, as every schoolboy knows, it flies faster than the speed of sound and looks just like a paper plane. The product of a remarkable joint Anglo-French venture started by the two governments in 1962, manufacture of the different parts of the aircraft was divided between French and British companies and the final assembly undertaken alternately by factories in Toulouse and Filton. Concorde was, of course, the first supersonic airliner, taking off simultaneously from London and Paris on 21st January 1976 and racing the Sun westwards to arrive (by the clock) before it had started. Never intended to be a mass produced aircraft, the select few that have been built are operated by British Airways and Air France mostly across the Atlantic, providing once-in-a-lifetime trips on anniversaries, prizes for the winners of gameshows and a rather exclusive business service.

The unique shape of the aircraft was designed to reconcile good control at slow speeds with low drag when travelling supersonically. It can cruise at Mach 2.02 at altitudes of 55,000ft or more, where the air density is only about one tenth that at sea level. The appeal of Concorde is entirely with its performance, since it is by no means a large aircraft, with a typical payload of only 25,000lb. Its cabin is 129ft long and only 8ft 8in wide, usually providing seating for 100 four-abreast, although as many as 144 seats can be fitted in.
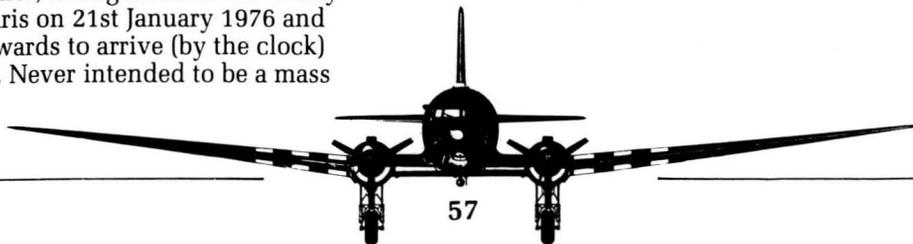
The **McDonnell Douglas MD-80** was the result of stretching the fuselage and upgrading the engines of the DC-9, and started out life as the DC-9 Super 80. It entered service in 1980, three variants being produced before; in 1984, the designation was changed to MD-80 and the variants became the -81, -82 and -83. All three are very similar to the -88 which appeared in 1986, as did the -87, which is also similar but is shorter and thus has a greater range. Like the DC-9, the MD-80 has become a great success, the similarities between the different versions being indicative of just how good the original model was, and there is no sign that the MD-80 family is yet complete. By 1988, well over 900 had been sold.

The MD-81 is powered by two Pratt and Whitney turbofans which give it a cruising speed of 499 knots at an altitude of 27,000ft and a range of 1,563 nautical miles. Its cabin is 101ft long and has a seating capacity of 172, five-abreast.

The **Boeing 757** is what Boeing finally came up with to replace the 727, which had remained the worlds best selling airliner well into the 1980s. For a long time the company tried simply to stretch the 727 and upgrade its engines, but eventually a whole new aircraft emerged, with two under-wing engines. In the end, the 757 has more in common with the 767, to the extent that a pilot can obtain a single flight rating to fly both models. The longest of the single aisle, narrow-bodied airliners, the 757 has a maximum capacity of 239 seats. A freighter version called the 757PF (Package Freighter) has been produced, as has the 757 Combi, which can combine passenger and freight in a number of different combinations. There is also an executive model called the 77-52. By 1987, 204 Boeing 757s had been ordered.

Two Rolls-Royce turbofans give the 757 a cruising speed of 505 knots at 31,000ft. It has a maximum payload of 57,530lb which it can carry with a range of 3,180 nautical miles. Its 118ft 5in cabin can seat anything from 178 to 239 passengers in a number of standard layouts.
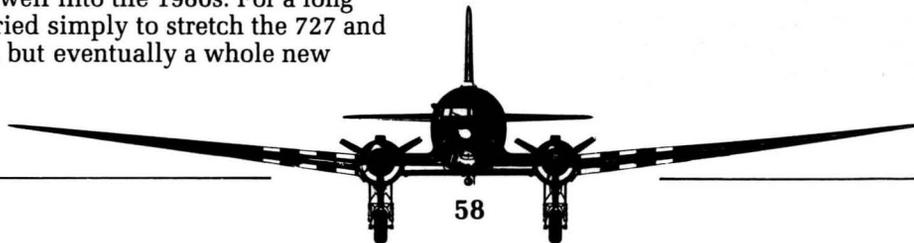
The **Boeing 767** is a medium-range large capacity aircraft, produced to compete with the Airbus A300. Breaking away from the narrow-body, single-aisle configuration of all the Boeing family jets (except the 747), the 767 is wide enough to seat eight-abreast, with two aisles. 767-100 and 767-200 models were initially offered but the American trunk operators for whom the 767 was intended all opted for the larger version and the 767-200 became the standard. It entered service in 1982, followed in 1984 by an extended range version called the 767-200ER, which was capable of transatlantic flight. The expected fuselage stretch came along in 1986 as the 767-300, again followed by an extended range 767-300ER. There is also an executive model called the 77-62. Over 250 of all models had been sold by 1987.

The 767 can be powered by two Pratt and Whitney or General Electric turbofans. The 767-200 has a range of 2,495 nautical miles and cruises at 484 knots at an altitude of 39,000ft. With a cabin length of 111ft, it can seat 220 mixed-class passengers six- and seven-abreast, 255 one-class seven abreast or a maximum of 290 eight-abreast. The 767-300 has a cabin 132ft 5in long, increasing the capacities to 269, 290 and 330 respectively.
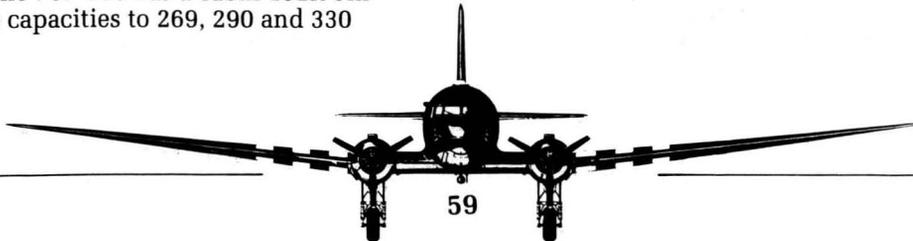
The **British Aerospace 146** is by far the quietest jetliner ever built. It is a tiny thing, only 94ft long, and can operate from small airports since it has the ability to takeoff within 700 yards and climb steeply away. It started life as a projected twin-engined turboprop with de Havilland back in the sixties. By 1973, de Havilland had been absorbed by Hawker Siddeley, and the H.S. 146 was launched in partnership with the British government, with a high-wing layout and powered by four small Avco Lycoming turbofans. Unfortunately, economic recession ended the program in 1974 and the 146 finally emerged in 1978, produced by British Aerospace, into which Hawker Siddeley had been nationalized. Production is mainly in the UK, with some parts being produced in the USA and Sweden. As well as cargo, military and executive versions, it comes in three sizes, -100, -200 and -300, two of the shorter -100 models being flagships of the Queen's Flight. By early 1987, before the -300 had been launched, sales totalled 81.

The BAe 146 cruises at 423 knots at a height of 24,000ft and has a range of 1,176 nautical miles. However, the appeal of this aircraft is very much with its provision of passenger comfort in a small aircraft. As well as the noise levels being low, it is one of the widest of the single-aisle aircraft and, since the wings are attached to the top of the fuselage, it offers unrestricted views out of the windows. The 146-100 seats 82-93 passengers six-abreast and the -200 typically 96 but as many as 109, also six-abreast. The -300 enters new realms of comfort seating 100, but only five abreast.
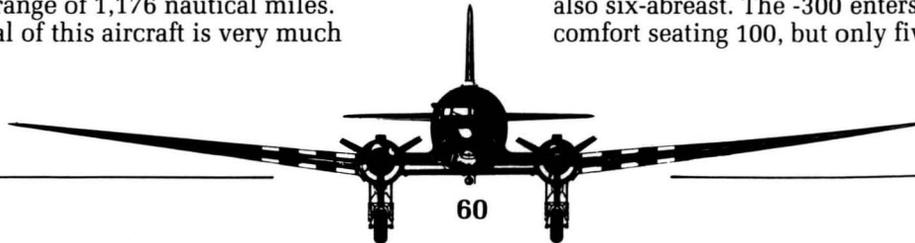
EPILOGUE:

THE STORY OF LAKER AIRWAYS
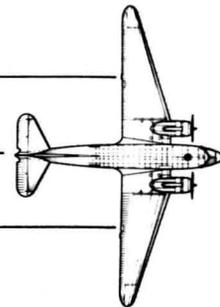
Freddie Laker is no fool. He is a very likable man, if inclined to get a little carried away with himself. He also knows the airline business, having been managing director of British United Airways before setting up his own company, Laker Airways in 1966. He started with two planes, running low-fare vacation charter flights, taking over another tour operator in 1968. A year later he leased a couple of Boeing 707s from the receivers of yet another operator, and started crossing the North Atlantic. Whenever he had surplus aircraft he leased them, complete with crews, to foreign countries including Zambia, Barbados and West Berlin, providing them with instant airlines in their own livery.

Then in 1971 he had his big idea — Skytrain. People could line up on the day they wanted to travel and buy cheap flights from London to New York, much as one does when buying a train ticket. As a charter operator, Laker was not part of the IATA and was seen as a threat by other transatlantic carriers. The big question was whether Skytrain would undermine other services or whether it would create a new market. Would businessmen and vacationers really be willing to turn up on the off-chance that there might be a cheap seat? The United States did not want to risk it, since both Pam Am and TWA were struggling, and the British Labor government was not naturally sympathetic towards a free-wheeling entrepreneur like Freddie .
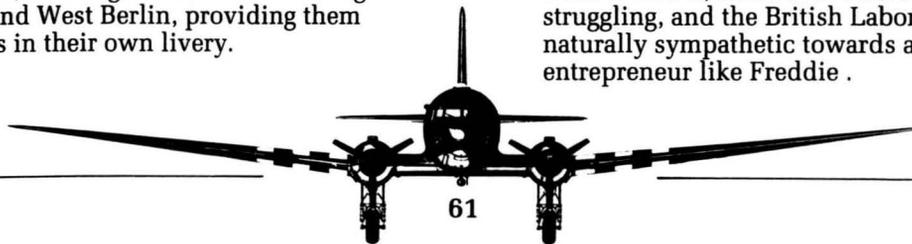
There followed six years of squabbling in the English courts before, in February 1977, Laker got his license to fly London to New York. The United States immediately followed suit and also granted their license, having realized in the meantime that what Laker was suggesting actually fit in very well with the deregulation of civil aviation that they were on the verge of introducing. In fact, Skytrain turned out to be good publicity for the extra competition and low fares that were bound to happen anyway within the American airline scene. Skytrain took off in the September, accompanied by the advertising hype - the clarion call to the ordinary people from one of their own - that Freddie Laker was so good at.

Selling tickets for Skytrain was so quick and easy that it turned out to be the cheapest sales operation in the history of scheduled air services. There were no frills on the flight either, to the extent that nothing was included and you could bring your own food if you wanted. At this point, Laker Airways had two 707s, four 1-11s and four DC-10s. A year later, just about to start a service to Los Angeles, Freddie announced that he would be buying 15 more wide-bodied jets at a cost of over $680 million. These would open up worldwide service called Globetrain.

Was all this really possible for a company worth less than $7 million little more than a year earlier?

The new Los Angeles route was not a success. The DC-10s were not really up to a non-stop flight of that distance, and many of the other carriers were by now matching Laker's fares. The image of Skytrain had become one of long lines of sweaty students, with no guarantee of a place on today's flight. The appeal of simply walking onto a plane and paying an unusually cheap fare was no longer there. The character of Skytrain gradually became more "book in advance and pay more" — just like everyone else. Then, a serious crash at Chicago in May 1979 involving a DC-10 resulted in all DC-10s being grounded for a while, and Skytrain had to suspend its service for six weeks at a cost of about $23 million.

Laker's problem was over-capacity. With all these brand new DC-10s arriving and the increased competition, not to mention a growing world recession, he was simply unable to fill his aircraft to a profitable level. Although he opened a service to Miami in 1980, he was unsuccessful in attempts to acquire routes to Hong Kong, Australia and Europe.
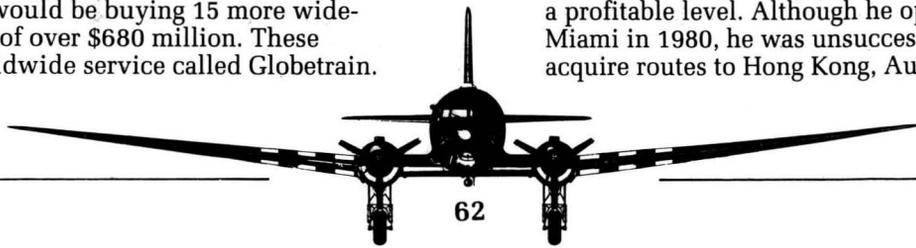
European air travel is notoriously over-priced, but it is also very well protected and Laker was never likely to succeed in taking the whole of the EEC to court. Undaunted, he ordered three new Airbuses in 1981 at a cost of $131 million. Was this wise?

In 1981, because his debts were mainly in dollars and his revenue mainly in pounds, Laker was very vulnerable to a weak pound and was forced to attempt to earn 25% more than he had budgeted for. One of those ominous crunch meetings of the banks took place in November, just as Pam Am started selling the cheapest fares across the North Atlantic. After the usual financial running around looking for a last minute savior, the lawyers were called in on February. It transpired that almost all of the profits from '79 to '81 had been due to beneficial changes in the dollar-pound exchange rate, and there were about $36 million in unpaid debts.

The airline business is not for the faint-hearted. From the solid base of a well-run, profitable and established carrier, and with a good, well-marketed idea, Freddie Laker managed to bankrupt himself inside five years. Like a marathon runner who starts sprinting with fifteen miles to go, he was ahead of the field for a time but was never likely to stay there. If Skytrain worked, of course the big carriers would bring their prices down too. In order to keep ahead, Sir Freddie (as he was by then) over-stretched himself at a time when the world economy was not at its most sympathetic.

In a recession, banks worry and vacationers decide to go abroad "maybe next year, if things are better" — but if you've borrowed literally hundreds of millions of dollars to buy your airliners, it doesn't take all that long for the interest payments to ground you!
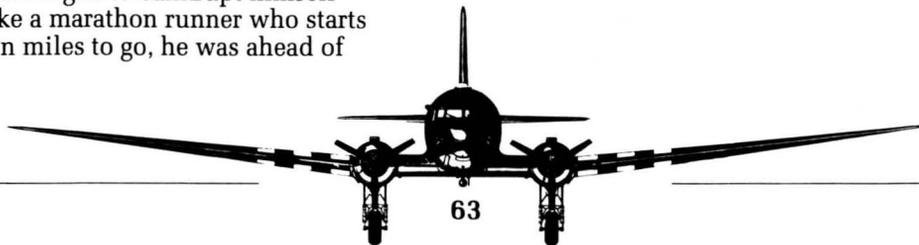
Impressions

Air Bucks

Version 1.01

Manual and Strategy Guide

Air Bucks Version 1.01 Manual & Strategy Guide

MANUAL

Impressions Software Inc.

Technical Support Line

If you have any problems installing this software, please call our Technical Support Line at (203) 676-0127, and a member of our Support Staff will assist you. Hours are 9 a.m. to 5:30 p.m. E.S.T., Monday through Friday.

Table of Contents

Changes in Version 1.01

At Impressions, we pride ourselves on our commitment to satisfying the customer. Among the praise and commentary we have received, there have been many requests for different features to be added to Air Bucks. Some people have wanted the interface to be more flexible, making access to important commands more rapid. Some have suggested a beginner's mode, so that players have time to learn the game. Some have asked that we redesign the visual style of the game. And many people have asked for more strategic pointers on how to set prices for a route. We have listened and reacted -- we hope that you like the results -- and that you continue to tell us what you think!

Version 1.01 of Air Bucks is an interim upgrade which refines the interface for the game and adds features and pointers to help first-time players start out. Version 1.2 will add 256-color VGA graphics, a zoom mode and other additional features.

Changes and Additions - Version 1.01

- The **Fast** speed is now 2.5 times faster than it was for version 1.0.

- The **Plane Income** chart is now also available from the Routes and Planes menus, in addition to being included on the toolbar (see below).

- Under Difficulty, the **Easy First Three Years** option gives inexperienced players a chance to learn the game.

- The **Replicate** command under Ticket Price now copies the three prices for the currently selected leg of a route onto all legs of the route.

- A **toolbar** now appears when all menus are cleared from the screen, allowing the player instant access to important commands.

- The algorithms for generating **Income charts** have been corrected.

- Finally, the computer player's A.I. regarding **pricing strategy,** and the **overall economic model** have been further enhanced.

4

IBM PC - Installation and Loading

(**IMPORTANT:** If received this booklet within your Air Bucks package, then your copy of Air Bucks has already been upgraded to version 1.01. In that case, **please ignore this page**.)

The files on this disk will upgrade the copy of Air Bucks already installed on your hard drive to version 1.01. When the UPGRADE program is run, certain files in Air Bucks' directory will be replaced with new versions of themselves. Then, Air Bucks v1.01 will be ready to run. Upgrading the game does not require additional space on your hard drive.

Hard Drive Installation

First, switch on the computer. If WINDOWS, DOSSHELL or other menu programs appear automatically when you turn on your computer, you should exit them now. In either case, you should now be at the DOS prompt, where you can enter commands. The prompt should look something like either "**A:\>**" or "**C:\>**". Insert the Upgrade Disk into a floppy drive, and type

> **A:** <ENTER>

> or

> **B:** <ENTER>

-- to access whichever drive the disk is in. Then, type

> **UPGRADE** *<source-disk>* *<dest-path>* <ENTER>

-- to run the UPGRADE program. *<source-disk>* is the name of the drive from which you are running the Upgrade; *<dest-path>* names the drive and path where Air Bucks is located on your hard drive. **Note:** There must be a space between UPGRADE and the source disk, and between the source disk and the destination path. **Note:** You must use a colon after the drive names for both the source and destination disks.

When the upgrade is completed, Air Bucks will be ready to run from the hard drive as before.

Examples

To run the upgrade program from floppy drive A:, when Air Bucks is installed in the AIRBUCKS directory on the C: hard drive, type

> **UPGRADE A: C:\AIRBUCKS** <ENTER>

To run the upgrade program from floppy drive B:, when Air Bucks has been installed to the GAMES\AB directory on the D: hard drive, type

> **UPGRADE B: D:\GAMES\AB** <ENTER>

5

Air Bucks -- How the Model Works

The economic model programmed into Air Bucks takes into account a multitude of factors and statistics. The airline executive who believes that he can make a cool million **just** by keeping his prices competitive, may soon find himself up to his ears in bank loans, and paying his meager profits out as stock dividends. The businessman who keeps a firm grip on all facets of his company is the one who could make incredible profits.

In economics, demand is a relationship between price and the quantity demanded of a product. In Air Bucks, **demand** is the measure of how many people will buy a ticket to fly on one of your planes. It is measured as a percentage, and is calculated using a wide range of factors described in detail below. One goal in playing Air Bucks is to maximize demand for your planes -- to fill your planes as much as possible, at the highest possible price. This would then maximize the income for that flight. Controlling demand is crucial to earning money -- the amount you earn per flight is the percentage of demand **times** the price per seat **times** the number of seats in the plane.

Unfortunately, some of that money earned must be spent to cover **costs**. In Air Bucks there are two types of costs: flight costs (which are incurred for every flight that you run) and overhead costs (which are charged annually or monthly, and are not directly related to the quantity of flights that your airline flies).

The largest factors used to determine the costs per flight are the distance and the fuel cost at the start of each flight. The resulting cost is then increased for any additional Comfort factors you have selected, and adjusted for the size of airplane flying the route: it costs far more money for a large jet to take off and land than it does for a small turbo-prop plane, so the average cost per mile needs to be adjusted to take that into account. This is the reason why modern airlines use much smaller airplanes for the very short flights.

Other costs per flight (such as maintenance fees, staff and landing fees) are deducted annually: you must be prepared for a large deduction from your bank balance at the end of each year!! Overhead costs (head office, advertising, bank interest and so on) are deducted either annually or monthly.

You should also be aware that Air Bucks will support up to 400 planes -- regardless of who owns them. Your corporation could in theory own and run all 400, or none.

For your information, demand is *not* calculated just by city, as many users have thought; demand for a route (or leg of a route) is calculated every time that an aircraft takes off; all the planes in Air Bucks actually "fly" their routes -- the model *does not* simply work out how many flights the planes could fly each month, and multiply through. This means that the latest possible information is used to calculate demand every single trip. This is also the reason why the computer slows down as the fleet size grows -- it is working much harder!

We have had several technical support users suggesting that the computer players had some sort of advantage: we state categorically that this is not the case. The computer players have no more information than you, and are given no advantages. They do, though, use the information available to them.

Air Bucks -- Your Aim

Your basic goal is to maximize profit, preferably by putting a passenger in every seat and filling the holds with as much cargo as possible, while charging as high a price for both cargo and passengers as you can!

While it is possible to fill every plane, surprisingly, you may well *not* want to do this. You might well need to drop prices so low in order to fill the plane, that you make less money than charging a higher price and having fewer passengers! Or, you may find that you are spending too much money to create this demand, and your revenue from fares is being swallowed whole by excessive costs.

This is really where much of the fun of Air Bucks comes in -- you can decide whether you wish to try a cheaper price with less luxuries strategy, or go for the best in quality, the highest prices -- and fewer passengers. Air Bucks allows for either of those extremes, and also many strategies somewhere in-between, to work well. You are in charge -- what do *you* want to do?

To help you carry out your chosen strategy, Air Bucks allows you to adjust many different factors -- all of which have an effect on both cost and demand. Due to the complexity of Air Bucks' economic model, and the nature of some of the factors, it is not possible to give precise rankings for all of Air Bucks' many options. There really are no set solutions to the game! Besides, if you knew exactly how the game worked, you would lose the fun of trying to perfect your business strategies!

What follows is, therefore, a guideline which describes each factor in more depth -- and which hints at how you might like to use it.

With these tips in hand, we encourage you to continue to experiment with the game. There are several ways to achieve success, using different policies. In fact, there are several different ways to achieve full demand -- so in theory, it is possible to achieve **greater** than 100% -- though, as in real-life, the numbers are adjusted for this, and you will not be able to fill your plane past capacity. You must try to find the most efficient strategy to increase demand, always being careful that your techniques do not cost so much that they deny you a chance at turning a profit.

Relative Ranking of Factors Affecting Demand

Most Important
Ticket Price
Plane Speed
Quality of Sites
Strange Pricing

Important
Seasonality
Age of Your Planes
Competition
Wages
Advertising
Reliability
Plane Size
Size of Route Network

Special Circumstances
First Class Travel
Cargo
Comfort Level

Descriptions

Ticket Price -- This is the single most important factor. When properly chosen, ticket price has the power to increase demand dramatically; when mismanaged, it can drive **all** customers off your planes. The customers decide what a good price is, based on the cost of the trip. Finding the best ratio of ticket price to cost is a challenge; obviously, many people will fly with you if you charge only $1.00 per passenger, but you won't be making any profits from them. You must find the right balance between offering good value for the customer, and charging enough to cover costs (plus a profit).

Note: You cannot fill your planes to capacity **just** by charging rock-bottom prices. Even though a good ticket price is crucial to your success, it alone fills less than **half** of each plane. The rest of the passengers on a 100%-full plane are attracted by the many other things you can do to increase demand.

Plane Speed -- As the game progresses, faster and more modern planes enter the market. The speed of a plane in Air Bucks can fill up to a **third** of flight; customers naturally prefer to ride the newest planes, as these usually provide the best in passenger comfort and safety. And more importantly, the fast planes get their passengers to their destinations more quickly. This effect on demand increases as the older planes become older, and the newest models look progressively better when compared to them.

Quality of Sites -- In Air Bucks, all of the things that make one city preferable over another are represented by one statistic: **size**. Size is an important factor in affecting demand; large cities will have more customers living in them, and more reasons for people to want to fly to them. Therefore, a direct flight from large city to large city is the best route to fly, and flights between small cities are the worst.

There is one exception to this -- if a small or medium size site acts as a stepping-stone between large cities on a route, then demand will be higher.

(more)

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Again, good prices and choice routes are the major components of a successful air service, but they are not the **only** ones. You won't fill a plane by changing only these two factors.

Strange Pricing -- This may be just a game to you, but to your customers, air travel is very serious business. So, if you start making screwball pricing decisions (like charging less for first class than for cargo), your business will drop severely. Passengers like stability. Silliness has no place in the service industry.

Seasonality -- Demand for your planes does fluctuate over the course of a year, to reflect the changing air travel market from season to season. You might want to adjust your prices, as the shift in demand can affect profitability.

Age of Your Planes -- Here, age does not mean how many years you have owned a particular plane; rather, it means how long that particular **design** of plane has been out on the market. As it ages and is surpassed by the latest models, a particular model of plane will start to look less desirable to the customer. Specifically, demand on that plane type begins to decrease after **ten** years on the market, and will continue to slowly but steadily decrease every year after that. This is different to plane *speed*, which increases the demand for a particular plane design because of its benefits; Plane age decreases the demand for a design because of its detriments.

Competition -- There is a limit to the number of passengers that want to fly any particular route -- and hence, also to the number of planes that can profitably fly on a route. That limit is not defined as a fixed number (it grows over time), but if you too many planes fly a given route, demand will begin to drop. Thus, you will need to seek many routes to fly on, and not just overfly the few you have. Just as in real life, you must use your judgment as to when to fly new routes, and when to add planes to existing routes.

Wages -- If you don't give your staff the wages they deserve, their treatment of customers will diminish, taking the demand for your planes down with it. It is important to always raise wages after strong profits, as your employees use your success as a guide for how much money they deserve. Nowhere is this more noticeable than after a particularly successful year; if you don't reward your staff, expect to see a sharp dip in demand come January. On the other hand, employees can only increase their efficiency so much before increased wages start to have diminishing returns.

Advertising -- Advertising works similarly to Wages, in that too little advertising will decrease demand, but too much advertising might not be worth the expense. Again, some managerial judgment is in order. Be aware, too, that the effectiveness of advertising is linked to the size of your company -- people expect a larger airline to advertise more, so you will need to increase your ad spend as your revenues grow.

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Reliability -- If you keep your plane maintenance level low, then your planes will be constantly breaking down, creating the image of a "dangerous" company. As a result, some customers will shy away from your services. The money you save in maintenance fees may not equal the ticket fares lost as a result.

Plane Size (Short Journeys for Large Planes) -- Planes designed to fly extremely long distances become inefficient when faced with relatively short routes. When this occurs, the cost of running that route **doubles**, as compared to when using a more appropriate plane. This does not effect demand, but profitability will plummet.

Size of Route Network -- Because customers do not like having to transfer airlines when flying complicated routes, and because they like to stick with one airline where possible, your demand will grow with your route network. This means that the demand for each flight will be higher for an airline with more active routes (if all other factors such as price, age of plane, advertising etc. were the same) than for a smaller airline.

First Class Travel -- Just as in real life, the market for first-class seats is located mainly in the larger cities. Demand for a plane flying to and from large cities will increase if first-class seating is available. On a plane flying only between small or medium cities, first-class will have more empty seats. (The wealthy people in small cities probably have their **own** planes!)

Cargo -- If a plane has cargo space allotted, it will automatically be filled when a city on that route has a cargo job waiting to go. Cargo jobs appear from time to time, and can be monitored using the **Jobs Available** and **Demand Report** commands on the Cargo menu. Cargo availability is variable from site to site; sometimes, cargo space on a plane will go unfilled, and potential passenger profit may be lost. On the other hand, when cargo is there, the money is good and cargo is more forgiving of an older, slower plane. You might prefer to set up a cargo-only plane instead; see the tips in the section on **Route Strategies**.

Comfort Level -- The eight options available from the Comfort command let you charge more for the same distance flown, and thus increase your profits. The eight options have different levels of effect, which are up to you to discover. Note that they also increase the cost of your flights.

Route Strategies

Obviously, where you decide to send your planes is very important to your success; it has a tremendous effect on demand, and can affect your long-term profitability, when competing with three other globe-spanning services. Here are a few general tips that will help in deciding what kind of route network to create. Note that the following information pertains primarily to passenger planes -- routing for cargo and cargo-only planes are covered in the next section.

In general, the name of the game is to create a web of routes connecting cities all around the world.

The temptation after reading the factor descriptions above is to only fly between large cities. However, there are two major reasons not to completely ignore the smaller sites. First, in the first decade or so of game time, some large cities are beyond the reach of your airlines, without the benefit of stopping over en route. Therefore, the small and medium cities in the middle of oceans and large continents are vital for connecting flights between the more profitable locations. As you upgrade your fleet to the latest models, these small locations will lose their significance in your network.

Second, even when you have jumbo-jets connecting the most distant points on the globe, and fly to every large city on the map, there is still more profit to be had. Travel still occurs between these smaller locations, and the money-seeking executive will find that a carefully-run service to and from these locations can add a nice pile of cash to your bank account. Also, shorter routes between less-important cities are a good place to deploy older planes, as they become too outdated for the big business. If those aren't enough reasons to explore this avenue, consider that your opponents will be doing so.

Cargo Strategies

Working the cargo market with passenger planes is largely a hands-off affair. Your planes fly from airport to airport as you have directed, and if there is cargo waiting at an airport, and your ticket price is competitive, your plane will automatically load up and collect the earnings. If there is more cargo waiting than your plane can carry, it will remain there until the plane returns to that part of its route.

In thinking about the cargo market, you should look at the **Demand Report** map under the Cargo menu. Here, sites with high or very high demand for cargo carriers are indicated by the colors black and red, respectively. If you have a route flying through an area or areas with greater demand, you may want to increase the cargo capacity of the planes assigned to it. On the other hand, if none of the cities on a route appear on the Demand Report map, you may want to replace cargo areas on that route's planes with passenger seating. However, always keep in mind that demand for cargo changes throughout the game; if you follow the advice above, you may find yourself refitting or rerouting planes repeatedly to better exploit cargo opportunities.

Another important place to look at is the **Cargo Income** chart under the Finances Menu. There, the two important figures are **capacity** and **volume**. The capacity of a plane measures, both in units and as a percentage, how much cargo it can carry on a flight; volume represents how many units of cargo are generally available on that route. If the volume of cargo produced by a route is sufficiently greater than the capacity of the plane flying on it, that plane will have to complete its route many times to completely ship the cargo. This is an ideal situation, as the plane will then garner a fairly steady cargo income from the route. However, this effect can be diluted if more than one plane flies on the route; and cargo appears at intervals, so there will still be "dry" periods for these planes.

You still have to be careful to set competitive prices for cargo; in fact, cargo uses the **same** formulas (for the most part) as in calculating demand for passengers, replacing one person with one crate of cargo. Additionally, if you set "silly" prices for cargo (like making it more expensive than economy seating), the world will notice and avoid your service. And if a plane fills less than **one quarter** of its seats, it is ineligible to pick up cargo.

Cargo-only Planes

One of the options mentioned in the Air Bucks manual is the creation of cargo-only planes. These planes have no passenger seating, having replaced it with storage space. Flying cargo is a fine purpose for those older planes that are incapable of turning a profit as a passenger carrier. Turning out cargo planes may be the preferred alternative to selling old planes of the fleet. However, the chartered cargo business requires a lot of attention and changing of routes to be successful, so too many of them may make the business unmanageable.

The creation of a cargo-only plane is simple. Simply **refit** a plane, replacing all seats with cargo space. Then, use the **Jobs Available** command to find a particular location with cargo waiting. Then, **make** a chartered route, solely for this plane, and make its final destination the location you chose. Keep in mind that if that location is too far away from the last city the plane flew to, then the plane's range will make it unable to complete the journey, and your route must include a stopover or two. Making the route **chartered** means that the plane will sit at its destination, once it arrives.

In some cases, the plane's capacity will be less than the volume of cargo available at the site. In that case, you may want to make the plane's route a scheduled one for a while, preferably between the site and another with cargo to pick up. That way, all of the cargo will eventually be picked up. To look for such cases, look to the Jobs Available and **Cargo Income** commands.

For game purposes, picking up cargo is all that is needed to complete the job and collect the income. Then, you can seek out new locations with cargo jobs available, and reroute your plane to them to pick up some extra cash. You may also use the **Demand Report** or Jobs Available commands to decide on stopover points that may prove to be profitable in and of themselves.

Questions and Answers in Air Bucks

Q: I have assigned a plane to a route, and I get urgent messages saying that the plane needs a new one. What's wrong with the route I have?

A: The problem is most likely one of two things. Either the route you assigned to the plane contains a leg longer than the maximum distance the plane can fly, OR the plane is currently at a location that is not on the route, and is too far away to reach the first stop on the route.

In the first case, you must change the route to make all distances shorter than the range of the plane, or you must replace the plane with one with greater range. In the second case, you must make a chartered route to reach that first stop, using short hops across your network of routes.

Q: Why do landing fees explode when I start doing very well?

A: The more money you have, the more the airport owners think you can afford to spend, and thus the more they will charge.

Q: Every time I see my bank balance go up, it seems that the amount earned is different. Is the economic model random?

A: No. Because the computer actually simulates every flight for every day of the entire month, the number of flights between each balance update may vary. Additionally, demand is recalculated for every flight, and as it accounts for slight variations in customer desires with each flight, the demand shifts slightly each time.

Q: Why do I lose large amounts of money from time to time, without warning?

A: Fees and outgoing costs are paid out at the end of each month and year. You will probably find that the sudden downturns come at the end of the month. If you are losing too much money to costs, you may want to change your strategies to include less frills, or perhaps reduce your wages and advertising budgets. If you go bankrupt in this way, you definitely need to rethink your plans.

Appendix: Cost Factors

Cost per flight is calculated as follows:

(Mileage/10) * Fuel Cost

This is then moderated by several factors:

- Comfort Factors (any selected by the user will increase the cost)
- Relative Plane Size (larger planes on short journeys result in more costly flights)
- Note that Maintenance Costs and Landing Fees are both charged annually, and not per flight.

It is not really practical to provide specific equations or tables: the equations are complicated by the fact that some factors only crop up in some circumstances. There is only one table of data -- that for inflation, which is based on historical data.

Let us know what you think of this game!

We have worked hard to provide an up-to-date, improved version of our game; but we know that we can never be perfect. So, if you have things that you would like to see added to list of improvements already planned for Air Bucks 2, write in and let us know!

Impressions Software
Attn.: Customer Support Executive
7 Melrose Drive
Farmington, CT 06032

AIR BUCKS

TECHNICAL SUPPLEMENT AND TUTORIAL

IBM PC - INSTALLATION AND LOADING

Air Bucks **cannot** be run from a floppy drive - it must be installed to a hard disk. When fully installed, it will take up about 2 megabytes of hard drive space.

Hard Drive Installation
Turn on machine, and wait for DOS prompt (C:\ etc.) — exit Windows or Dos-Shell if they run automatically on startup.
Insert disk 1 in a floppy drive, and access that drive by typing

       A: <ENTER>
       or
       B: <ENTER>
— whichever is appropriate for your PC.

There are four choices of installation programs you can run; your source drive and destination drive determine which one you should use. To install Air Bucks, type

       INSTALxy

at the DOS prompt, where x is the source drive (the floppy drive you will use to put the game
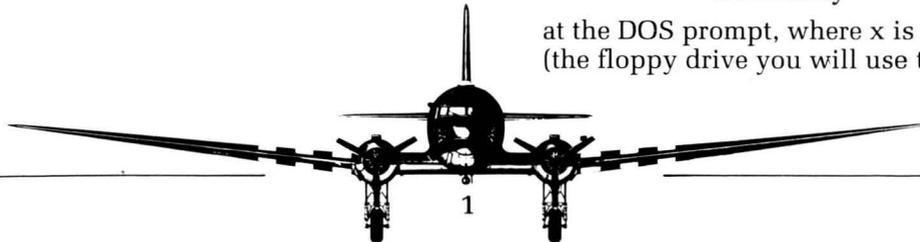
disks in), and y is the destination drive (the hard drive you wish to use to store the game). You can install this game from either drive A or B, and onto either hard drive C or D. The four options are therefore: INSTALAC, INSTALAD, INSTALBC and INSTALBD.

The install program makes a directory on your hard drive called AIRBUCKS, and copies all the files on the disks there. The program will prompt you on-screen when you need to switch disks.

Loading from the Hard Drive

From the DOS prompt (see step 1, above, if you are not there already), type

        C: <ENTER>
        or
        D: <ENTER>

to access the hard drive where you installed Air Bucks, then type

        CD\AIRBUCKS <ENTER>

to select the directory which contains Air Bucks. To run the game, type

        AIRBUCKS

and the game will load.
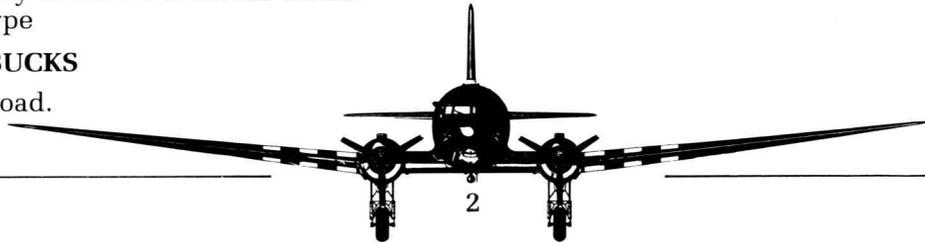
The Options Panel

After loading the game, you will be presented with an options panel. You may select whether to use an AdLib or compatible sound card (if you have one or not), and whether or not to use the mouse. A mouse is recommended for playing Air Bucks.

To use the panel, type the number of an option to toggle it; or move to an option with the up- and down-arrows, and use the left- and right-arrows to change it. Pressing <ENTER> or typing the number "3" for the Start Game command exits the options panel and begins the game.
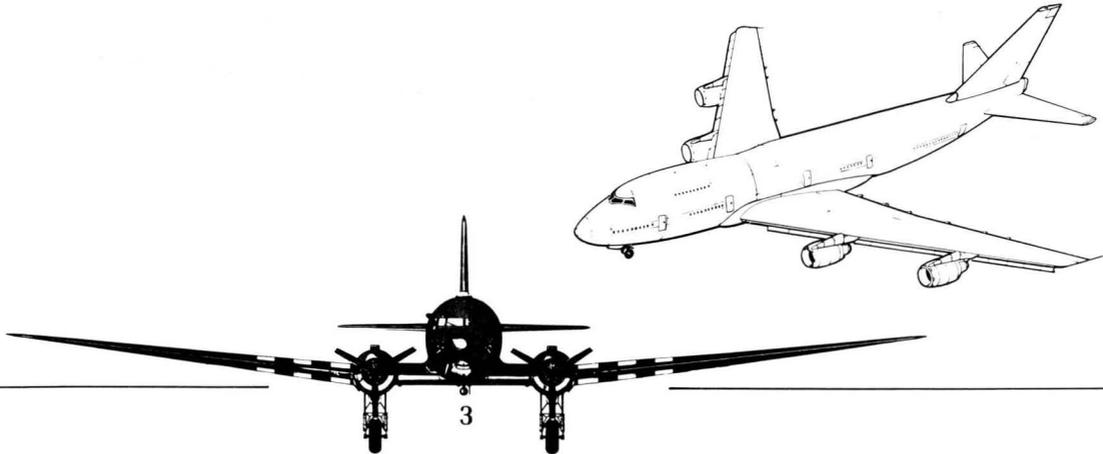
TUTORIAL

Anxious to make your first million? We understand. That's why we've worked out this brief tutorial for you. By the time you're done with it, you'll have your first major landing site, your first route to travel and your first plane in the air. But most importantly, you'll start the money rolling in!

In Air Bucks, the two things you need are planes to fly and places to send them. You start with only one plane - a Dakota DC-3, flight number AB0. It'll get you started.

However, you only have permission to land at one airport - Miami. Unless you get rights to another airport, you're looking at a pretty short trip. So, use the menu bar across the top of the screen to select the **Routes** menu.

Selecting from Menus: You always select menus and commands by moving the mouse pointer onto them and clicking the left mouse button, or by typing their first letter on the keyboard.

Having clicked on Routes or typed R, you get a list of commands. Select **Negotiate New Site** in the same way.
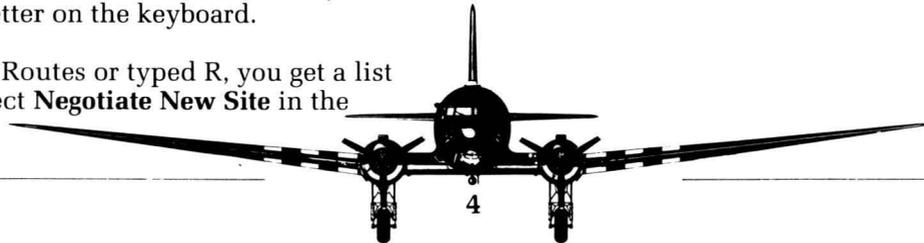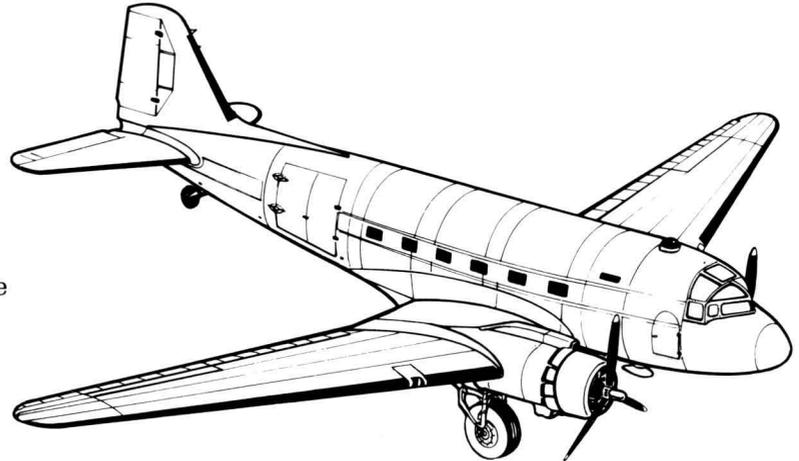
All the black dots that appear on the map are airports that you can buy rights to. New York is a good bet to start with.

Selecting Airports: Specify an airport by clicking directly on it with the mouse. Alternatively, use the Next and Previous commands to step through the whole list.

Try and select New York. It's 900 miles northeast, up the coast from the red dot which is Miami. When you've got it, you will see its name on the bar at the bottom of the screen.

If you can't get New York, or want to choose another city, **any airport within 1,000 miles** of you will do. 1,000 miles is the maximum distance your DC-3 can fly. The distance from a site to your nearest airport (in this case, your only airport) is the third piece of information in the bar on the bottom of the screen.

Having chosen an airport, select the **Acquire** command at the top of the screen, and confirm by selecting Yes.
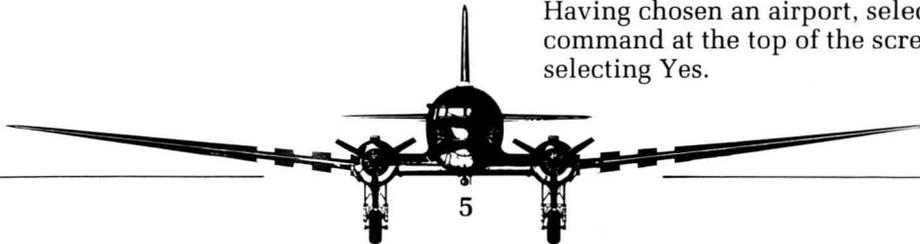
It'll take a while for your landing rights to come through, so you'll have to wait. **Game time only passes when you aren't in a menu**, so get out of Negotiate and the Routes menu.

Quitting a Menu: To jump out of a menu, hit the space bar or click completely outside of the selection area.

After a while, the date on the bottom left of the screen should change from OCT 1946 to NOV 1946, and you will be told that you have landing rights at New York.

Creating a Route: Your plane is now allowed to go to New York, although it won't until you tell it to. So, the next thing to do is give Plane AB0 a new route. Select the **Routes** menu again. When that appears, choose the **Alter Route** command, and after that the **Make** option.

Click on the figure 1 in the center section of the screen, or type 1. You are saying where the first stop on your plane's route is to be. Miami is fine, so just select **Ok** or hit the space bar, and it should go into slot 1.
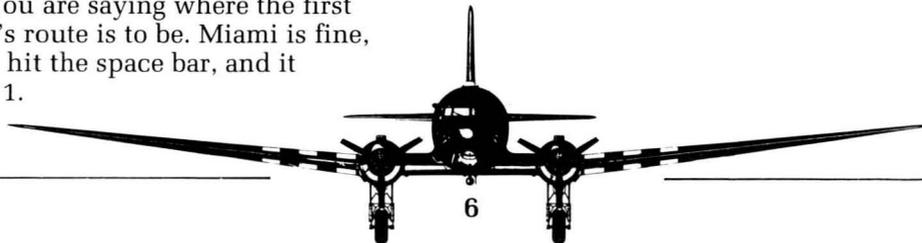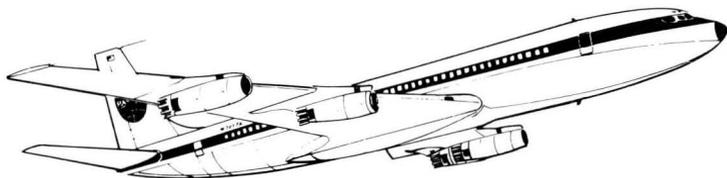
Now select slot 2 and select New York on the map (the Next command should get you there quickly). Confirm again with Ok or the space bar. You should now have Miami and New York as the stops on your route. Ok or the space bar will confirm the whole choice. You need to select the **Assign** command to leave the routes screen (remember, you are still inside the Alter Routes command).

Select Ticket Prices from the Routes menu (it should still be on the screen). The screen that appears shows the prices you are going to charge for each class of travel on each leg of your trip. Try $125 for all first class travel, $80 for second and $75 for cargo.

Changing Prices: To say which price you want to change, either click on the figure itself in the table, or move around the pricing grid with the cursor keys. To actually change the number, just type it again. To make mass changes to all the prices on the route, use the **Up** and **Lower** commands. To change the percentage difference it changes by, use the **Inc** and **Dec** commands.

When you are happy, use **Ok** or the space bar to get back to the **Routes** menu, and quit out of that.

After a few seconds' delay, your plane status should change from **Idle** to **Miami** or **New York**, and the cash should start rolling in. You're on your way!
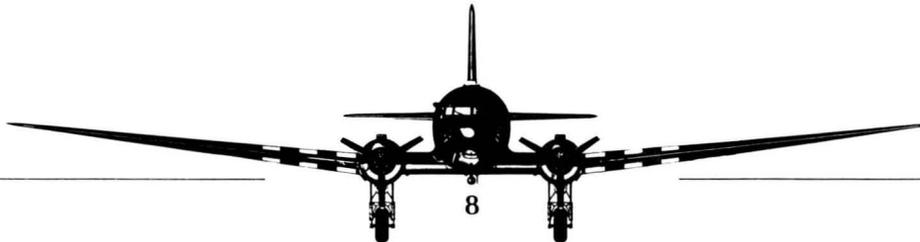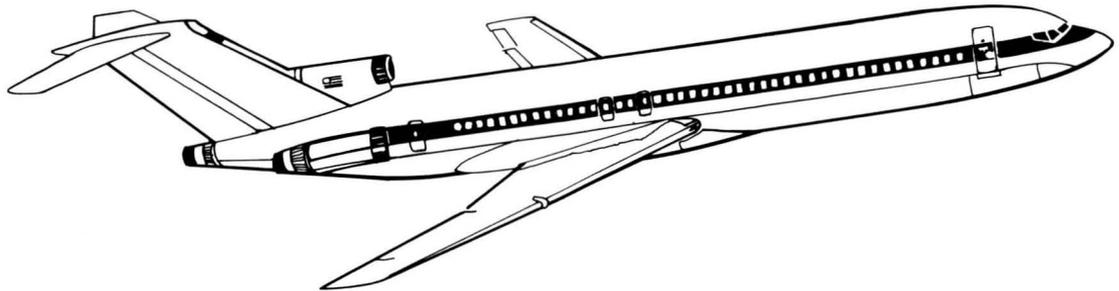
Additional commands were added, and game aspects were changed, after the **Air Bucks** manual went to press. They are explained below, grouped by the menu they appear on or affect.

MAIN MAP SCREEN

There is a small error in the manual. The airline logo is located in the lower left corner of the screen, not in the lower right.

You must first clear all menus from the screen before you can change the current airline.
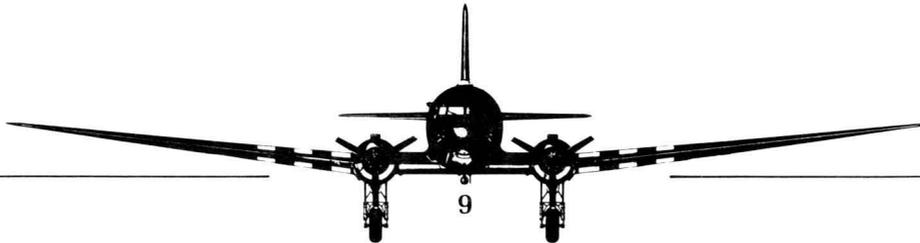
GAME OPTIONS (AIR BUCKS MENU)

Difficulty Options

There are two options to increase the difficulty of the game, in addition to randomizing city size. Located in the **Difficulty** window, they are New Plane Each Year and Base.

New Plane Each Year speeds up the debut of new plane models, which would normally appear on a more occasional and historically accurate schedule. A new plane each year means that greater distances will be easily crossable much sooner in the game; all airlines will be able to expand more rapidly — if they can afford it. Consider this a method of playing a "short game" of Air Bucks. You can toggle this option on or off within the first month — but not at all after that.

Base allows you to change the city that your airline is based in. With it, your first landing site need not be in Miami; it can be anywhere, in any country. Changing your base will affect the strategy of the game, as new geography puts a different set of cities within your immediate grasp. However, players looking for exclusive
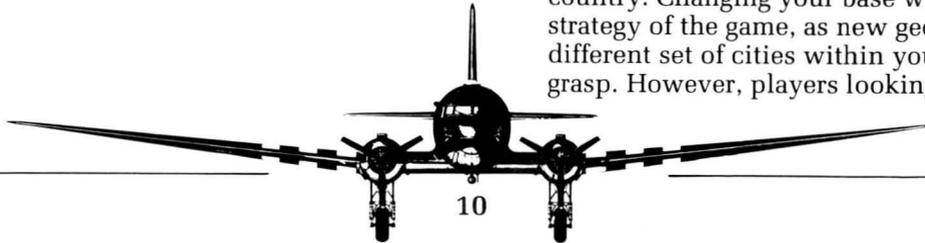
markets would be advised to look elsewhere. All four airlines begin from the same site, no matter what it has been changed to. Remember that all your planes are delivered to your base when first purchased. You can only use this option right at the start of the game, and cannot later change it — so be careful!

To change your base, use the + and - keys, or select them with the mouse. They will cycle backwards and forwards through all the cities on the map. **Warning:** Be careful not to choose an airport that is further than 1,000 miles from every other city, otherwise you will not be able to do anything with your DC-3.
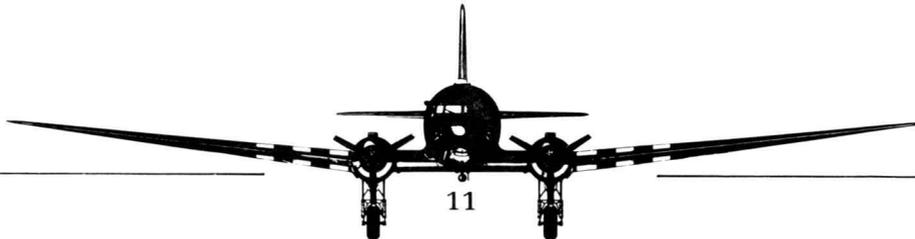
ROUTES MENU

Site Trade

To enter in a bid for a landing site offered for sale by a competitor, just type in your offer and press <ENTER>. There are no Increase or Decrease commands.
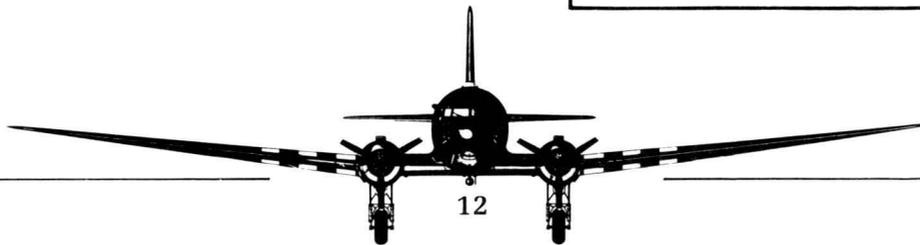
Reliability

You can choose any percentage using the **Increase** and **Decrease** commands. Selecting **High, Medium** or **Low** will set the percentage to a preset number for that level. The higher the percentage, the higher your maintenance costs, but the lower your repair bill should be. You will need to set a level you can both make money at and be comfortable with.
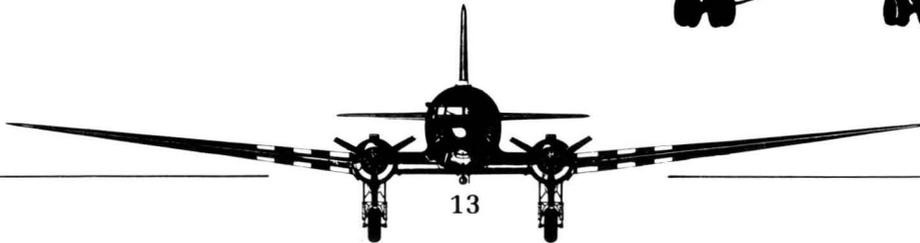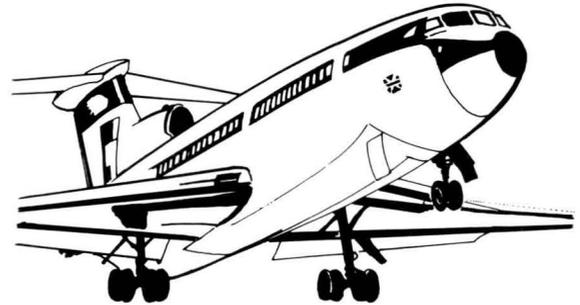
FINANCES MENU

Taxation

Taxes are applied to any profits you make at a rate of 35%. Taxes are paid (grudgingly) from your balance at the end of each **year.** Make sure you have built up a large enough balance to cover it by December, or you may be forced to take out a loan — or even bankrupted out of the game! Tax bills can be large!

Financial Graphs: Annual Worth / Valuation

The use of the name "Annual Worth" in the manual is incorrect. The name is now **Valuation,** to avoid confusion with the Yearly Worth graph.

Profit and Loss Report (Bottom Line)

Some outgoing costs were omitted from the Bottom Line report. The complete list of outgoings are: general (fuel, staff, and **advertising**) costs, landing rights purchased, planes bought, maintenance costs, interest repayments, and **taxes** and dividends to investors.
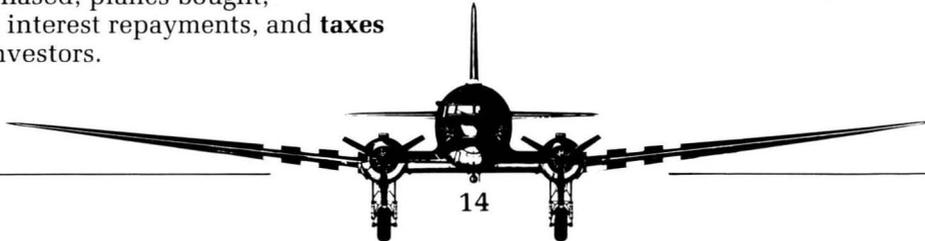
Employee Wages

The attitude of your pilots, flight attendants and ticket-counter attendants has a definite effect on your business; and one sure way of souring the mood of your employees is to pay them poorly. The **Wages** command lets you set wages, and thus improve or hinder business. The more profit you make, the larger share your staff feel they deserve; you may need to adjust this rate regularly to keep them happy.

Use **Increase** or **Decrease** to change the percentage of wages paid (the percentage is based on a hypothetical maximum). Two statistics are displayed to help guide your decision: Wages Paid this Year and Turnover. **Wages Paid this Year** shows how much you have spent on payroll. **Turnover** indicates total fares for the year.

Wages are deducted from your balance at the end of each month; you should make sure you have enough to cover them, or you may be forced to take out a loan.
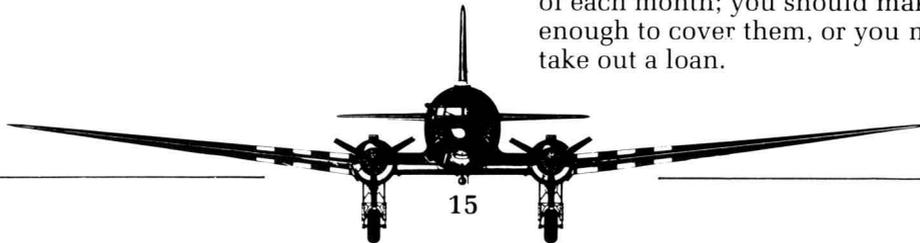
Advertising

Advertising can improve your sales. You can use the **Advertising** command to adjust your airline's advertising policy.

Two figures are displayed: **Ad Spend to Date** tells you how much you have invested in advertising, and **Turnover** tells you your total fares for the year, which you should use as a guide for setting the advertising expenditure.

Use **Alter Ad Spend** to change the annual Advertising budget. A maximum budget for that moment will be displayed to guide you, and you will be prompted to type in the new budget. Enter the number with the keyboard and press ENTER to continue.

Advertising money is deducted from your balance at the end of every month. If your balance is too low, the deduction may cause it to bottom out, and you may need a loan to keep going.
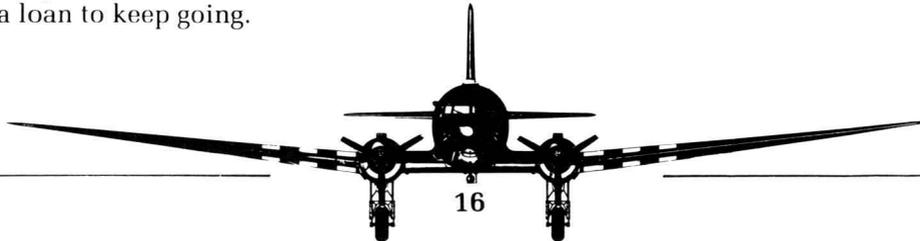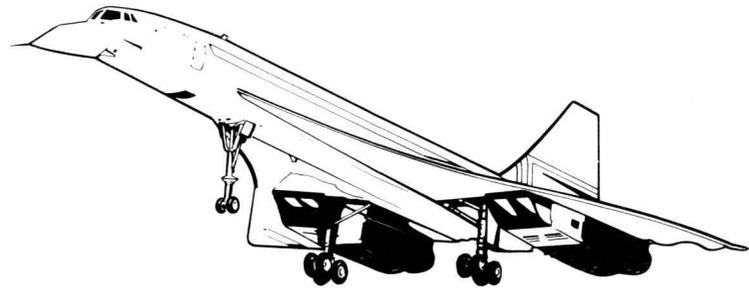
Advertising adds one other, important feature — the **Slogan**. Selecting this option brings up an Air Bucks billboard, and a text editor that allows you to enter a new, one-line slogan. Press ENTER or click the mouse to continue when you have finished typing.

Many an airline's ad campaign has hinged on a one-line motto that you can't help but remember. Slogans will pop up in the game from time to time, but the choice of slogan does not affect gameplay. Even so, we recommend you try something like these: Air Bucks - **Better than Walking;** Air Bucks - **We Want Your Money;** or Air Bucks - **Transglobal Stinks.**

The Market Research Report

This powerful feature will advise you on how your airline is doing, and what you should consider changing about it. Selecting the **Research** command brings up a commissioned report, giving brief, general reviews of Sites Owned, Reliability, Passenger Comfort, In-Flight
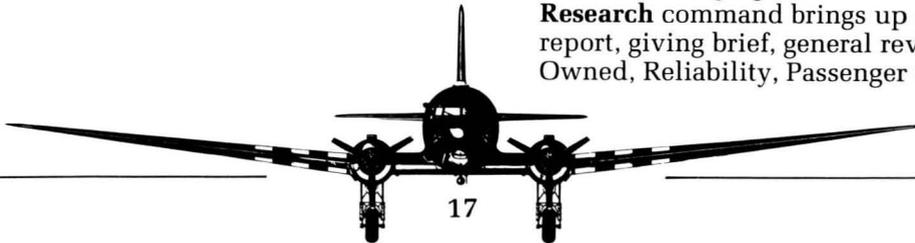
Service and Brand Recognition. Through these five reviews, it will notify you how you are handling (or mishandling) most aspects of your airline. If you are losing money, this is a good way to find out why.

However, all this helpful information doesn't come cheap. There is a charge for each report you commission, so use this feature wisely. The charge is $20,000 at the start of the game — but rises over time.
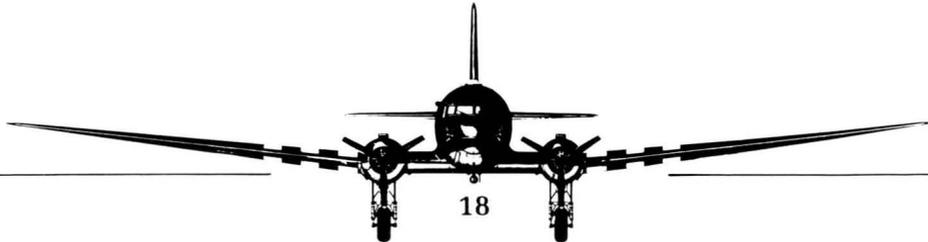
Another Overview of the Stock Market

Here, in brief, is an example/explanation of how the stock market works. You begin your company with 100 shares. Let's say that right now your company is worth $100,000 dollars. Each of your current shares is worth $1,000 — and so will any other shares created at that time. So, if you sell 20 additional shares, they will sell for $1,000 each, and your company will receive $20,000 for them. Now your company is worth $120,000, and there are 120 shares, and so **each stock is still worth $1,000**. And you have $20,000 in new cash to spend on new sites and planes, increased advertising etc.. However, you have to pay dividends to each person who owns shares, and if you sell too many (more than you own), you lose control of your own business.

Buying and Selling - the Stocks Screen

There are two screens: the **Buy** screen and the **Sell** screen. You start out on the Sell screen. Select S or B to choose which one to display.
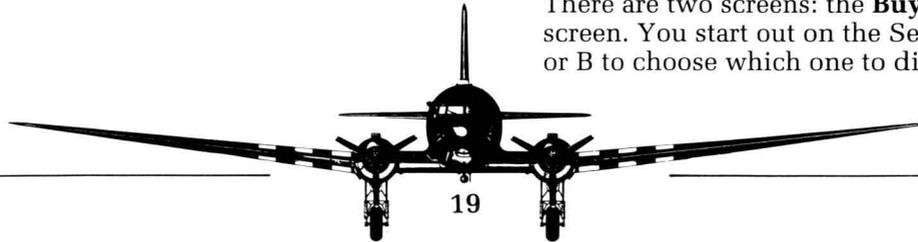
On the **Sell** screen, there is a grid representing each company's stocks, divided by its owner. The names on the left represent the stock **owners;** the names across the top show **which** stocks are owned. Each company starts with 100 shares owned in their own company. (In reality you, the owner, own these shares in your airline — companies are not allowed to own all the stock in themselves.)

To sell shares, use the mouse or cursor keys to move the asterisks to one of the kinds of stocks you own. Then type **A** or click on **Action** to make a sale; type in the number of shares to sell and press ENTER, and answer Yes to confirm the sale. Selling stocks owned by another company puts them out on the market. As discussed above, selling your **own** stocks actually creates new shares, and puts them on the market for people (and other airlines) to purchase. Putting them on the market gives you additional revenue from the money paid by the new owners of the stock; however, dividends are paid out to shareholders, and are a drain on your bank balance.
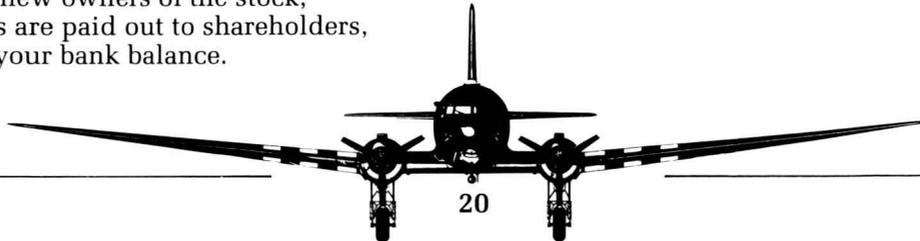
If none of the other airlines buy your stocks, they will be purchased by other buyers in the stock market — and will be available for purchase back by you (or the other airlines) at a later date, should you so wish.

Also, remember that if you sell new shares such that you no longer own fifty percent or more of the total shares, you lose control of your company. This is not the same thing as selling fifty or more of your shares, because in selling them you actually create new ones, and the 1-to-1 proportion of shares to percentage points no longer exists.

To **Buy** a stock from (of all things) the Buy screen, select one of the four share listings at the top of the now-empty grid. A listing of "0" means that there are no shares of that stock currently on the market. Select **Action** while on a stock that is available, type in the number desired, and press ENTER. You will be asked to confirm. Buying back shares will allow you to regain controlling interest of your company, or at least cease paying
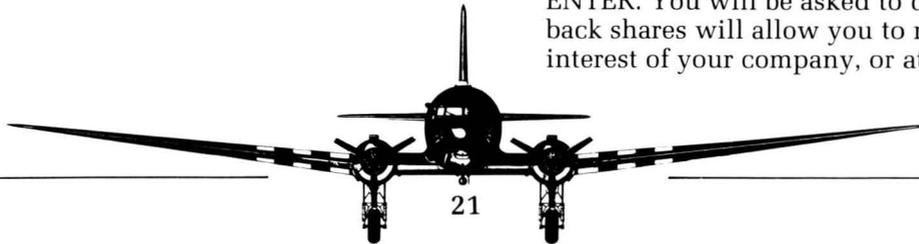
dividends to outside shareholders. Additionally, buying shares is a good way to gain controlling interest in **another** company; you will receive dividends from the shares you own. If the other airline does well, you will gain — and the end-of-year messages will recognize your achievement. You, of course, will have the satisfaction of knowing that, as owner, it is **you** who are the real winner!
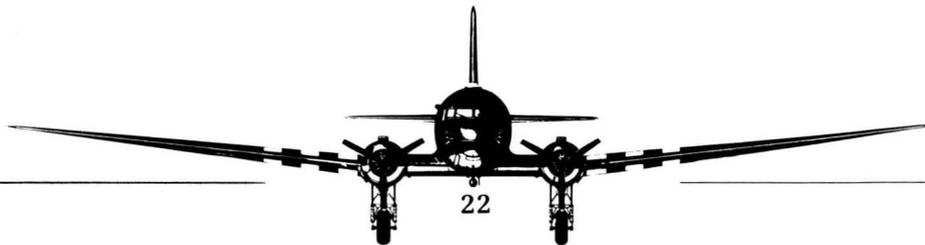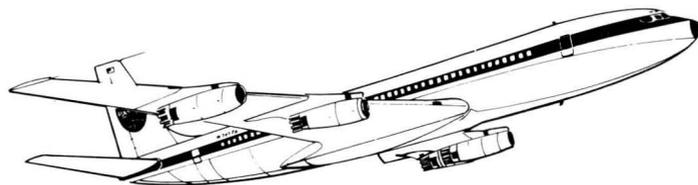
KEYBOARD COMMANDS

IMPORTANT: Keyboard commands will only work if the **Caps Lock key is turned off.** If you suddenly lose all response from the keyboard, make sure that Caps Lock is not lit.

In Air Bucks, nearly every accessible keyboard command is displayed on screen; to use a certain command or open a particular menu with the keyboard, just type the letter highlighted in that command, as it appears on screen.

Ticket Price Grid — When creating or changing ticket prices, use the cursor keys to move around the grid of prices. The highlighted price is the one currently selected. All other commands are displayed on the screen

Additionally, prices are entered using the numbers on the keyboard or the numeric keypad. However, if the Num Lock key is lit, and numbers can be typed using the keypad, you will not be able to use **either** set of cursor keys. You will still be able to select prices with the mouse.
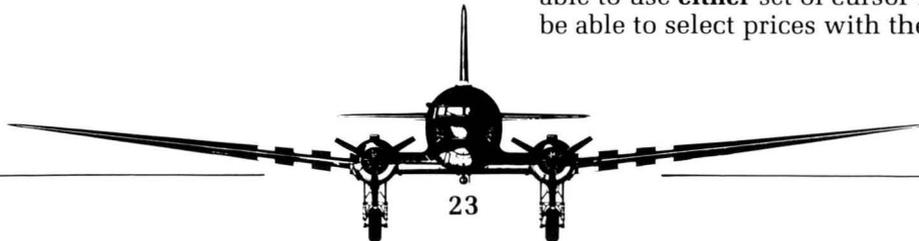
Impressions

AIR BUCKS

PC

Disk 1

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