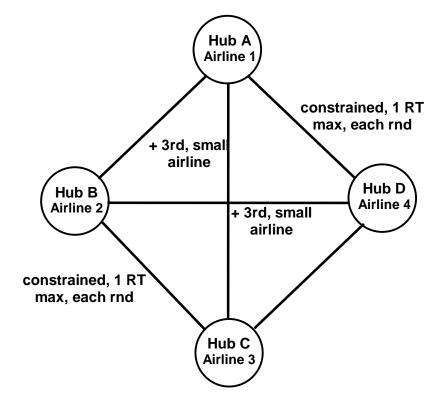# The Airline Game (4 Years) – lud.io

The Tutorial

First, start by playing the tutorial for about 45 minutes (click on « the tutorial » on this page: https://lud.io/transport . You will also find the companion document of the tutorial here: https://lud.io/resources/site/manual/aireconsim-tutorial.pdf . Be careful, there are other tutorials on other pages). It is only intended to introduce you to the structure and interface of the game, you do not need to spend much time thinking about your best strategies (and anyway the robots of the tutorial are not particularly smart competitors).

After playing the tutorial, you can start the main game, vs robots. The robots will probably be difficult to beat. They do not "cheat", but they follow a rather elaborate (though not optimal) strategy. So, do not worry if you do not manage to beat them.

Game Start

You are competing with 3 major (robot) airlines of your region (Air Betland, Charly Sky and Delines Corp).

Each airline is based on a hub and can only operate flights between its hub and the 3 other hubs. For example, airline 3 - Charly Sky - and airline 4 - Delines Corp - can both operate flights between airports C and D. Consequently there are only two airlines operating on each route. Except on two routes, A/C and B/D, on which a third robot-airline, "Air Small 1" or "Air Small 2", is also present (but the total number of potential travelers is the same on these routes as on the other routes).

Moreover, routes between B/C and A/D are congested at the start of the game and traffic is regulated: you can only operate one roundtrip per round on these routes (airport landing/takeoff rights are called airport slots: By extension, we will also talk about slots here, and consider that you have only one slot on these routes).

For now, costs are the same as in the tutorial (note that you will have to pay about 8000€ of fixed cost per route and **per round**. You can avoid these costs only if you decide to leave the route (i.e. if you select 0 round trip in off-peak **AND** in peak period). Demand on each route is also the same as in the tutorial.

Aircraft Characteristics

Aircraft Characteristics

Aircraft	RoundTrip Capacity	Annual Cost (ie for 2 Rnd)	Roundtrip Cost	Passenger Cost	CO2 per RoundTrip (tons)	CO2 per seat	Average cost per seat (full use)	Average cost per seat (partial use)
✈ Br837	300	€6,150	€8,100	€4	48	0.16	37.2	47.5
✈ Al420	400	€7,560	€9,680	€4	60	0.15	33.6	43.1
✈ Br857	500	€8,750	€10,850	€4	71	0.142	30.4	39.2
✈ Al440	600	€9,720	€11,800	€4	83	0.138	27.8	35.9
✈ Br837LessSeats	240	€6,150	€8,100	€4	48	0.2	46.6	59.4
✈ Al420LessSeats	320	€7,560	€9,680	€4	60	0.188	42.1	53.9
✈ Br857LessSeats	400	€8,750	€10,850	€4	71	0.178	38.1	49
✈ Al440LessSeats	480	€9,720	€11,800	€4	83	0.173	34.7	44.8
✈ Br837MoreSeats	360	€6,150	€8,100	€4	48	0.133	31	39.6
✈ Al420MoreSeats	480	€7,560	€9,680	€4	60	0.125	28	35.9
✈ Br857MoreSeats	600	€8,750	€10,850	€4	71	0.118	25.4	32.7
✈ Al440MoreSeats	720	€9,720	€11,800	€4	83	0.115	23.1	29.9
✈ CleanBr837	300	€7,995	€7,472	€4	41	0.137	38.2	51.6
✈ CleanAl420	400	€9,828	€8,896	€4	51	0.128	34.5	46.8
✈ CleanBr857	500	€11,375	€9,922	€4	60	0.12	31.2	42.6
✈ CleanAl440	600	€12,636	€10,715	€4	71	0.118	28.4	38.9
✈ CleanBr837LessSeats	240	€7,995	€7,472	€4	41	0.171	47.8	64.4
✈ CleanAl420LessSeats	320	€9,828	€8,896	€4	51	0.159	43.2	58.5
✈ CleanBr857LessSeats	400	€11,375	€9,922	€4	60	0.15	39	53.2
✈ CleanAl440LessSeats	480	€12,636	€10,715	€4	71	0.148	35.5	48.6
✈ CleanBr837MoreSeats	360	€7,995	€7,472	€4	41	0.114	31.9	43
✈ CleanAl420MoreSeats	480	€9,828	€8,896	€4	51	0.106	28.8	39
✈ CleanBr857MoreSeats	600	€11,375	€9,922	€4	60	0.1	26	35.5
✈ CleanAl440MoreSeats	720	€12,636	€10,715	€4	71	0.099	23.7	32.4

Note Average costs given in this table are only based on annual and roundtrip costs and not on passenger cost or any other cost.

Note Additional Fixed cost for each Route: €8,000

Note One Aircraft can make one roundtrip every round. If you choose 5 roundtrips in peak periods and 2 roundtrips in off-peak periods using Br837, you will need to lease 5 aircrafts during the whole year.

In the example above, your costs over the year will equal 5*€6,150 for the annual costs + 7*€8,100 for the costs related to the (1*5+1*2) roundtrips, + the costs related to the passengers (€4 for each passenger).

In this game, you do not have access to the "cleaner" planes

SCENARIO

Here is what will happen during the game (more details will be given inside the game)

YEAR 2

- From now on, airlines have the ability to choose to put more or less seats (+/- 20%) in your planes (aircraft called "MoreSeats" or "LessSeats").
    - The Roundtrip and Plane leasing costs remain the same as with standard aircraft.
    - The more seats in a plane, the less comfortable the flight is. Of course, this will have an impact on demand. Business travelers will put more value on comfort than leisure travelers.

YEAR 3

- A "fixed" tax is introduced, €12000 per year for each route over which an airline operates.

YEAR 4

- The tax introduced in year 3 is removed
- The congested and regulated route is not congested and regulated anymore.
- A new law forbids price discrimination on the market that used to be congested:
    - On this market, airlines will have to keep the same price in phases 2 and 3 as in the first phase of a round. On other markets, they will still be able to change their price.