

#### What we supply

- Advice on what basis to investigate
- Report on cost difference between crew base scenarios

#### How fast?

- Normally within 1 month from receipt of data

#### Extended scope

- An extended scope may affect the delivery schedule

#### What we need to know

- Timetables (one or two) and required time periods <sup>1</sup>
- Today's crew data (required distribution of crew per duty base, in duty days or block hours)
- Aircraft rotations for each timetable <sup>2</sup>
- Industrial regulations
- Crew agreements
- Cost structure (major cost drivers such as daily crew costs, credit time, etc) <sup>2</sup>
- Major stability criteria (minimum crew connection times, standard delay buffers, etc) <sup>2</sup>

<sup>1</sup> Can also be extracted from standard OAG.

<sup>2</sup> Can be simulated, if information is unavailable.

## Questions & Answers

#### Are we obliged to use Carmen optimization software to benefit from the analysis?

No. The study will relate all costs to what the original base structure would have allowed. This means that no matter what system you use for production planning, the estimated cost impact of changing the base structure will still be valid.

#### Is it possible to limit the number of crew that a specific base can cope with?

Yes. The limitations in the original comparison scenario must, of course, be respected. In the scenarios where new crew base candidates are investigated, it is also possible to limit the number of crew members that a specific crew base candidate will be able to cope with.

#### We have differing agreements for different crew bases. How does the analysis deal with this?

The planning tools can deal with crew agreements for various crew categories or crew bases. In the analysis, it is possible to

decide which agreement should be applied for a specific crew base, country or region.

#### What is the required level of involvement from our organization?

This depends very much on your needs. Most of the information required for this study can be extracted from public sources or approximated by us, based on our experience from working with similar studies. However the level of detail and the quality of the advice we can give you is of course to some extent dependent on your ability to devote some time to this project. Of course, the less exact the information put into the analysis, the less exact the results will be.

*If you have any questions about Crew Base Analysis, please contact your Carmen account executive or consulting@carmenconsulting.com.*



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# Crew Base Analysis

- Does your base structure fit your operation?
- Can you lower your total crew cost by changing the base structure?
- Which are the best candidate bases to open or close?

**A change of just one per cent in crew productivity represents seven figure savings or costs for a mid-sized airline's operations. With extensive experience and unique tools Carmen can advise on how to change your base structure and how to rapidly make expert evaluations and simulate operational modifications. This enables you to make decisions based on facts.**

## Benefits

To give you an idea of how well your crew base structure is co-ordinated with your operations, Carmen can compare the effect on crew costs of various crew base scenarios. These scenarios describe varying combinations of new and existing bases. For each scenario, the total crew cost and optimal crew distribution is reported, for a given flight program.

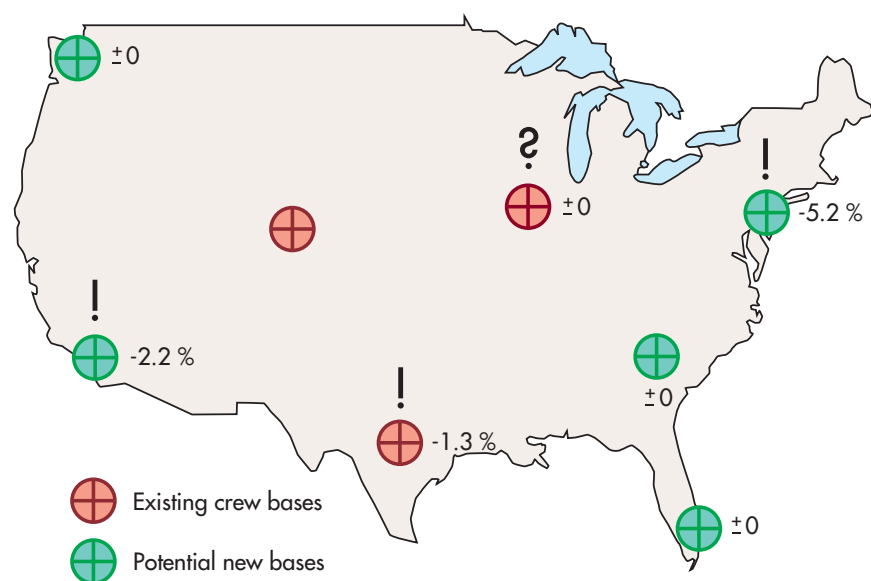
## Scenarios

In the study, we plan anonymous crew using various scenarios and in different time periods. All scenarios are compared to a base line using existing crew base structures. This ensures that the final comparisons will be independent of the planning tools used today.

We use Carmen Crew Pairing, the same tool used by many of the world's leading transportation companies for the technical aspect of the study.

## Crew Base Candidates

We discuss crew base candidates, investigating the most frequently visited airports and those with a strategic position in the flight network. A preliminary plan is created with all possible crew base candidates. After this, we try crew base candidates with good



*The result of a crew base analysis, with detailed analysis for each potential base. The numbers describe the cost impact of adding a base, redistributing crew between bases, and closing a base.*

potential individually, and in combination. We can also investigate specific crew base candidates or combinations of crew base candidates.

## Method and Scope

We start the project with agreeing on the scope and the goals. You explain your questions and we bring up potential problems based on our experience from the airline industry. Following this we set up the system and maintain close contact with your staff to perform the analysis. We plan for cockpit or cabin crew, using weekly schedules over three time periods. This can be done for two timetables. Where applicable, we can also investigate increasing or decreasing the difference in cabin and cockpit crew bases. If more appropriate, daily or monthly planning

can also be carried out.

The basic analysis can be expanded to cover even more. It is possible to investigate how changes in specific regulations or cost structures will influence crew distribution, investigating alternative timetables, etc.

### Results from a study

- Advice on how to investigate base candidates
- Cost comparisons for all scenarios
- Crew base candidates that could be added, changed or closed down
- Detailed planning scenarios
- Analysis of each scenario