

Dispute methods resolution comparison toward the Aircraft contracts¹

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ABSTRACT

The aircraft industry is a very complex business because its products required a high expertise and heavy technologies. This complexity causes disputes between the parties which most of the time makes the contracts to fail. Thus, the aim of this paper is to identify and to compare the different dispute resolution methods thanks to the Additive Weighting Technique. This Multi-Attribute Decision Making method enables the author to find out which is the most suitable dispute method resolution. Indeed, at the end of the paper the author suggest the use of the Negotiation method to best resolve the disputes in Aircraft contracts. By applying that particular method Aircraft contractors will be able to resolve the disputes without damaging the relations between parties meanwhile saving time and money (compare to the other methods).

Key Words: Contract, dispute, resolution, process, aircraft industry

INTRODUCTION

In less than 5 years the Aircraft market is forecasted to increase till 209 billion of dollars. Even if the aircraft industry is very profitable it's a complex business as well. This complexity weakens the Aircraft contracts and most of the contracts failures are due to disputes between the parties. In the major cases, these disputes arise because of a poor scope definition of the project. The causes of the disputes are several like: aircraft crash, payments, cultural issues, unprofessional procedures, insufficient durability, missing part of work, delayed delivery... However, there are an amount of process and tools to resolve those contracts disputes. Indeed there is: mediation, arbitration, adjudication, court action, meetings...

In this paper I'm going to review what are the different alternatives to disputes resolution according to those references: EJCDC, CSI Manual Practice, Fidic, Consensus Docs and AIA. I will develop the outcomes of each alternative and compare them thanks to some criteria. Finally, I will be able to select which is the best alternative to resolve disputes in Aircraft contracts.

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Disputes in Aircraft contracts can damage the relationship between different parties and can also threaten the meet of requirements as well as affect negatively the quality of the output and its time delivery. That's why the recommendations that I will make at the end of my paper is a good opportunity for Aircraft contractors to avoid losing time and money using disputes resolution methods that don't work for their industry.

In this paper I will answer those questions:

1. What are the different methods that could be used to resolve disputes in Aircraft contracts
2. What is the most suitable dispute process in this particular industry and why?

METHODOLOGY

In order to answer the problem of this paper I used several methods of the Multi-Attribute Decision Making (MADM) because most of the attribute are subjective so it's a good way to quantify them. Therefore, I chose to use a Disjunctive Reasoning Technique (from the non-compensatory model). Moreover, I used a Relative Weighting Technique and an Additive Weighting Technique (from the compensatory model).

FINDINGS

Step 2. Development of the alternatives

1. Prevention
2. Negotiation
3. Standing neutral
4. Non-binding resolution
5. Private binding resolution
6. Litigation

Step 3. Development of the outcomes for each alternative

Prevention

It refers to all the tools used to reduce the issues and problems that can show. This could be done through: planning, team building, management of the change and quality...

Negotiation

It's a conversation between the parties to try to find an agreement and resolve the dispute together.

Standing neutral

For this process the parties should appoint an independent Standing Arbitrator or a Dispute Review Board at the very beginning of the contract. Those people will be in charge of finding solutions to problems arising between the parties.

Non-binding resolution

This process can be done through different quite informal methods like mediation, mini trial, advisory, opinion. However, it also contains arbitration which more formal.

Private binding resolution

The tools of that process are more formal and are stipulated in the contract. Indeed both parties will agree in the contract how to solve problems (it could be: Arbitration, Binding, or a Private Judge).

Litigation

It's when the organization uses the justice (the civil court) to resolve controversial issues between the parties. The court can force a party to apply its decision.

Step 4. Selection criteria

I selected 6 criteria in order to compare each alternative toward these attribute. However the criteria don't have the same importance according to the author. See on the table below the rank of the criteria. It appears that the "cost" is the most important whereas "easily enforceable" is the less important.

| | Time | Cost | Flexible | Maintening Relationships | Binding and easily enforceable | Resolve any level of disputes | Ranking (score) |
|--------------------------------|------|------|----------|--------------------------|--------------------------------|-------------------------------|-----------------|
| Time | 0 | 1 | 1 | 1 | 1 | 1 | 4 |
| Cost | 1 | 0 | 1 | 1 | 1 | 1 | 5 |
| Flexible | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Maintening relationships | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| Binding and easily enforceable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Resolve any level of disputes | 0 | 0 | 1 | 1 | 1 | 0 | 3 |

Figure 1. Non-compensatory model - Disjunctive Reasoning Technique (by the author)

| Attribute | Prevention | Negotiation | Standing Neutral | Non-binding resolution | Private Binding Resolution | Litigation |
|--------------------------------|------------|-------------|------------------|------------------------|----------------------------|----------------|
| Time (in days) | 1 | 4 | 8 | 15 | 30 | 60 |
| Cost (in €) | 80 | 300 | 850 | 2000 | 5000 | 10000 |
| Flexible | High | Good | Medium | Low | Poor | Not at all |
| Maintening relationships | Excellent | Good | Good enough | Poor | Very poor | Bad |
| Binding and easily enforceable | Very easy | Easy | Quite easy | Quite difficult | Difficult | Very difficult |
| Resolve any level of disputes | Not at all | Poor | Fair | Moderate | Good | Very good |

Figure 2. Non-compensatory model (by the author)

These tables show us the acceptance criteria and their importance but also how each alternative to dispute resolution scored on those criteria. As we see in the second figure Prevention failed to answer to important criterion which is “resolve any level of disputes” and Litigation failed on all the acceptance criteria except one. Then we will not consider anymore those two alternatives in our further analysis.

Step 5 : Analysis of the feasible alternatives

| Flexible | | Maintening relationships | |
|--------------------------------|---|-------------------------------|---|
| Good | 4 | Good | 4 |
| Medium | 3 | Good enough | 3 |
| Low | 2 | Poor | 2 |
| Poor | 1 | Very poor | 1 |
| Binding and easily enforceable | | Resolve any level of disputes | |
| Easy | 4 | Poor | 1 |
| Quite easy | 3 | Fair | 2 |
| Quite difficult | 2 | Moderate | 3 |
| Difficult | 1 | Good | 4 |

Figure 3. Compensatory Model – Relative weighting (by the author)

| Attribute | Value | Formula | Dimensionless Value |
|--------------------------------|-----------------|---------------------------|---------------------|
| Time (in days) | 4 | $=(4-30)/(4-30)$ | 1 |
| | 8 | $=(8-30)/(4-30)$ | 0,85 |
| | 15 | $=(15-30)/(4-30)$ | 0,58 |
| | 30 | $=(30-30)/(4-30)$ | 0 |
| Cost (in €) | 300 | $=(300-5000)/(300-5000)$ | 1 |
| | 850 | $=(850-5000)/(300-5000)$ | 0,88 |
| | 2000 | $=(2000-5000)/(300-5000)$ | 0,64 |
| | 5000 | $=(5000-5000)/(300-5000)$ | 0 |
| Flexible | Good | Relative rank (4-1)/(4-1) | 1 |
| | Medium | Relative rank (3-1)/(4-1) | 0,67 |
| | Low | Relative rank (2-1)/(4-1) | 0,33 |
| | Poor | Relative rank (1-1)/(4-1) | 0 |
| Maintening relationships | Good | Relative rank (4-1)/(4-1) | 1 |
| | Good enough | Relative rank (3-1)/(4-1) | 0,67 |
| | Poor | Relative rank (2-1)/(4-1) | 0,33 |
| | Very poor | Relative rank (1-1)/(4-1) | 0 |
| Binding and easily enforceable | Easy | Relative rank (4-1)/(4-1) | 1 |
| | Quite easy | Relative rank (3-1)/(4-1) | 0,67 |
| | Quite difficult | Relative rank (2-1)/(4-1) | 0,33 |
| | Difficult | Relative rank (1-1)/(4-1) | 0 |
| Resolve any level of disputes | Poor | Relative rank (1-1)/(4-1) | 0 |
| | Fair | Relative rank (2-1)/(4-1) | 0,33 |
| | Moderate | Relative rank (3-1)/(4-1) | 0,67 |
| | Good | Relative rank (4-1)/(4-1) | 1 |

Figure 4. Turning each attributes into a base 1 - scoring model (by the author)

| Attribute | Negotiation | Standing Neutral | Non-binding resolution | Private Binding Resolution |
|--------------------------------|-------------|------------------|------------------------|----------------------------|
| Time (in days) | 1 | 0,85 | 0,58 | 0 |
| Cost (in €) | 1 | 0,88 | 0,64 | 0 |
| Flexible | 1 | 0,67 | 0,33 | 0 |
| Maintening relationships | 1 | 0,67 | 0,33 | 0 |
| Binding and easily enforceable | 1 | 0,67 | 0,33 | 0 |
| Resolve any level of disputes | 0 | 0,33 | 0,67 | 1 |
| TOTALS | 5 | 4,07 | 2,88 | 1 |

Figure 5. Compensatory model - Relative Weighting (by the author)

| Attribute | Step 1 | Step 2 | | | Negotiation | | Standing Neutral | | Non-binding resolution | | Private Binding Resolution | |
|--------------------------------|---------------|-----------------------|-------------|------------|-------------|------------|------------------|------------|------------------------|------------|----------------------------|------|
| | Relative rank | Normalized Weight (A) | (B) | (A)X(B) | (C) | (A) X (C) | (D) | (A) X (D) | (E) | (A) X (E) | | |
| Time (in days) | 4 | $=4/15$ | = | 0,27 | 1,00 | 0,27 | 0,85 | 0,23 | 0,58 | 0,16 | 0,00 | 0,00 |
| Cost (in €) | 5 | $=5/15$ | = | 0,33 | 1,00 | 0,33 | 0,88 | 0,29 | 0,64 | 0,21 | 0,00 | 0,00 |
| Flexible | 1 | $=1/15$ | = | 0,07 | 1,00 | 0,07 | 0,67 | 0,05 | 0,33 | 0,02 | 0,00 | 0,00 |
| Maintening relationships | 2 | $=2/15$ | = | 0,13 | 1,00 | 0,13 | 0,67 | 0,09 | 0,33 | 0,04 | 0,00 | 0,00 |
| Binding and easily enforceable | 0 | $=0/15$ | = | 0,00 | 1,00 | 0,00 | 0,67 | 0,00 | 0,33 | 0,00 | 0,00 | 0,00 |
| Resolve any level of disputes | 3 | $=3/15$ | = | 0,20 | 0,00 | 0,00 | 0,33 | 0,07 | 0,67 | 0,13 | 1,00 | 0,20 |
| SUM | 15 | SUM | 1,00 | SUM | 0,80 | SUM | 0,72 | SUM | 0,57 | SUM | 0,20 | |

Figure 6. Compensatory model - Additive Weighting Technique (by the author)

Step 6 : Selection of the preferred alternative

According to the results we have in the previous tables, we can say that Negotiation has the highest score (which is 0.80). Therefore, Negotiation is a better choice by $5/4.07 = 1.23 * 100 = 123\%$.

Furthermore, we can rank the alternatives from the best to the worst like this: Negotiation > Standing Neutral > Non-binding resolution > Private Binding Resolution

CONCLUSIONS

In the introduction I asked two questions which I'm able to answer now:

1. What are the different methods that could be used to resolve disputes in Aircraft contracts?
 - Negotiation
 - Standing neutral
 - Non-binding resolution
 - Private binding resolution
2. What is the most suitable dispute process in this particular industry and why?

The best method to resolve dispute in an aircraft contract is to use Negotiation because this it's what came out when we carry out an Additive Weighting Technique of the Multi Attribute Decision Making.

FOLLOW ON RESEARCH

During the analysis of the feasible alternatives of this paper we found out that the prevention is one of the methods to resolve disputes. However it's unclear which tools are used to do prevention. Therefore, it would be relevant to do more research on this method. On the other hand, in order to see if my recommendation was good or not we could use a Before and After Pareto Analysis.

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APPENDICES

Here is the document that allows me to understand how to carry out methods from the Multi Attribute Decision Making concept. <http://www.planningplanet.com/guild/gpccar/managing-change-the-owners-perspective>

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