

aircraft turnaround; apron safety;
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Martin HROMÁDKA

University of Žilina, Faculty of Operation and Economics of Transport and Communication,
Air Transport Department
Univerzitná 1, 010 26 Žilina, Slovakia
Corresponding author. E-mail: hromadka@fpedas.uniza.sk

TURNAROUND COORDINATOR. YES OR NOT?

Summary. Both low cost carriers ‘fresh wind’ and liberalisation of ground handling market makes airlines to be cost-wise in every single field. Thus, ground handling contract are cutting down in terms of their costs. Handling companies struggle with pressure being put from the market environment, they rush 25 minutes turnaround with couple of people. This can be potentially dangerous from the safety point of view. One of possible solutions seems to be introducing turnaround coordinator, person who would supervise the ramp handling procedures. This paper discusses the role of turnaround coordinator within the aircraft turnaround process. Duties and responsibilities of this person are described. However, not every airport is staffing this position. The survey shows that smaller airports pay much more attention to this issue than the big ones.

KOORDYNATOR. TAK CZY NIE?

Streszczenie. Niskie koszty niosą „świeży powiew wiatru”, a liberalizacja rynku obsługi naziemnej sprawia, że linie lotnicze mądrze gospodarują kosztami w każdej pojedynczej dziedzinie. Tak więc umowa obsługi naziemnej przewiduje obniżenia pod względem kosztów. Firmy obsługujące walczą z presją z otoczenia rynku, śpieszą się z 25 minutowym obrotem zaledwie z kilkoma osobami. To może być potencjalnie niebezpieczne z punktu widzenia bezpieczeństwa. Jedno z możliwych wyjść wydaje się wprowadzać koordynatora, osobę, która nadzorowałaby procedurę obsługi ramp. Ten artykuł rozważa rolę koordynatora w ciągu procesu samolotu. Opisane są zadania i obowiązki tej osoby. Natomiast nie każde lotnisko posiada tą pozycję w personelu. To badanie pokazuje, że mniejsze lotniska zwracają dużo więcej uwagi na ten problem niż te wielkie.

1. BACKGROUND

Looking at the current state of the civil aviation industry, one can recognize that the airline market, over the last decade, has been facing a difficult time. Mentioning only 9/11, SARS issue, oil prices, consolidation but the biggest impact has come from the low cost model. This kind of fiercely competitive model has forced both airlines and ground handlers to make significant changes. We could have seen airlines reduce their short haul routes (because this segment was attacked by low costs carries) or sell off their ground handling divisions. In spite of that, high volume of competition remains in the industry.

2. IMPACT OF LIBERALISATION ON GROUND HANDLING MARKET

The European Union is undertaking a revision of the ground handling directive, to further liberalise operations at European airports. If there is a country having a wide experience with competition in this market, it definitely is the UK. Even before the 1996 European Directive, the UK experienced a higher degree of competition in ground handling than most other European countries. Thus, there is something to be learned from this case, before deregulation UK-style spread on other markets. The general argument in favour of increase in competition is improvement in service, efficiency and quality at better value for money. Obviously, this is typically airlines' argument for greater competition in ground handling market. But UK experience proves that it is false. Competition among ground handling companies, of course, has led to reduced service on the ground at reduced cost. This kind of reduction has an impact on the passenger experience – check-in queues are long due to less check-in counter staff, baggage delay and lost bags happens more and more frequently [12]. Moreover, the passengers have to pay for basics. At the end of the day, competition has delivered cheaper cost only. Unfortunately, that is what most airlines really and only want.

The deregulation and liberalization processes taking place in the aviation market call for competitive actions, which should ensure an increase in the efficiency of aviation companies' activities, their development and the realization of their goals [11]. At Gatwick airport, the last attempt to introduce a fifth ground handler led to the loss of one of the others, with no overall gain in numbers. One in, one out. Conditions at Rome Fiumicino airport have dramatically changed due to the impact of increased competition. Seven ground handlers are now bidding for tenders at the airport – the price per aircraft turnaround has halved. In UK, when the airlines are calling ground handlers into meetings for negotiations, they are demanding cutting the cost of the contract by 15% or lose it [3]. This approach has led to airlines-friendly effect – saving money, cutting the prices of handling contracts, demanding more for less.

The airlines benefits meanwhile handling employees suffer as labour costs account typically for 80% of overall costs for ground handling [3]. The pressure being applied onto the ground handlers means they have to reduce their labour costs to survive in this kind of environment. Furthermore, this has led to another drawback as increasing agency and temporary workers, training departments reduced, equipment poorly maintained, workloads too high, overtime out of control, very few turnaround plans. The problems start with the service level agreements between the airline and the ground handler signed by both parties. Both know well that the handler will struggle, and often fail, to meet the agreement because there is not enough staff (saving labour costs) or equipment (the same reason) to fulfil the terms, especially, when 20 or 25 minutes turnaround times are set [1]. The ramp workers are aware that on-time departures are of paramount importance because of financial penalties if leaving late. They are expected to get the aircraft out on time at all costs.

3. GROUND HANDLING AND APRON SAFETY

Combination of the time pressure and under-staffing can be potentially dangerous and at variance with 'safety first' rule [1]. When an aircraft arrives on stand, it is the moment where every single contractor competes to get to the aircraft first. Refuellers compete with caterers, caterers compete with crew buses, crew buses compete with security, security compete with engineering and of course baggage handlers compete with everyone.

Finally, some curious situations can occur. E.g., aircraft is pushed back without a walk round and then it has to come back on stand because onboard systems have picked up that hold doors are still open. When the tugs are racing to get aircraft out on time, pushback bars can snap. Or one can even see headset men running after aircraft because the flight crew have not waited for the ground crew to give them clearance and the headset is still plugged into the aircraft Intercom as the aircraft taxis.

The ramp is a tough place to be at. It is noisy, congested and windy with lots of hazards. Aircraft with running engines have hot and strong exhausts, with suction hazard at the front. Moving tractors with baggage carts, fuel trucks, catering trucks, lavatory service trucks, taxiing aircraft and other

vehicles make driving complicated and dangerous. Unloading aircraft and handling mail, freight and baggage can cause injury from the weight of the materials handled. Belt loaders and other motorized equipment have their own particular hazards as well. For ramp workers, steel-toed shoes are a must, as well as ear protection and proper dress. In winter operations de-icing has its own hazards-ingestion of glycol and burns from hot water [4].

Reduced number of staff involved in turnaround operations has caused that many airlines, airports or handling organizations no longer use a person in the turnaround coordinator position [2]. But this issue can be the right way forward to safer apron operation.

There are several concepts of such a solution. First, airport operators could introduce and be responsible for a neutral turnaround coordinator to ensure that the myriad third party contractors working around aircraft are supervised and turnaround plans followed and adhered to. Another possibility is to establish turnaround coordinator from the handling company or a particular airline when the self-handling is applied.

In fact, such an approach is used at plenty of airports worldwide. At these airports, this person is considered as a natural and irreplaceable. On one of the latest ACI session, this issue was discussed as a potential way to improve apron safety. Representatives from airport where this concept exists declared that mentioned proposal had worked in operation at some airports for years.

4. TURNAROUND COORDINATORS' DUTIES AND RESPONSIBILITIES

At airports where this position is applied in the operation, there are various terms used to denominate it. Turnaround coordinator, ramp agent, ramp control supervisor, however one wants.

For the next lines, the term turnaround coordinator will be used according to Ground Operation Manual of Czech Airlines. The employee in this position oversees ground handling activities to ensure safe, effective and punctual aircraft turnaround. Object of and duties are described in the IATA Aircraft Handling Manual [4]. What is important to note is the fact that turnaround coordinator is not required by any international regulation. Everywhere this role exists, it is just a good habit resulting from local requirements of particular airport or handling company.



Fig. 1. Turnaround coordinator supervising Emirates' Airbus 777-300 loading at Prague airport
Rys. 1. Koordynator kontrolujący samolot Airbus 777-300 z Emiratów ładowany na lotnisku w Pradze

Duties of turnaround coordinator (according to IATA Aircraft Handling Manual) are as follows [4]:

- ✓ ensurance of regulation of airline,
- ✓ coordination and control of activities during turnaround,
- ✓ problem managing,
- ✓ ensurance of process adherence,
- ✓ ensurance of handling sequence and punctuality,
- ✓ moderator between involved parties,
- ✓ contact person for all questions,
- ✓ noting and reporting safety issues.

5. PRAGUE AIRPORT CASE STUDY

At this point, a closer look at an example of the airport where turnaround coordinator is established is provided. Prague airport will serve as good case study.

There are three big ground handling service providers – Prague Airport, Czech Airlines Handling and Menzies Aviation. All the three are staffing the position called „ramp agent“. As the Prague airport has implemented CDM procedures, ramp agent plays an important role in this process. For all the flights that are subject to CDM, he is obliged to (according to CDM procedures of Prague airport):

- ✓ announce Target Off-Block Time (TOBT),
- ✓ hand over crew de-icing requirements and de-icing level,
- ✓ announce Actual Ground Handling Finish,
- ✓ inform crew about Target Start-Up Approval Time,
- ✓ entering Actual Ground Handling Start into the PDA.

Note at Prague airport, every single ramp agent is equipped with Personal Digital Assistant. This mobile device uses software application for wireless transfer of information from aircraft ground handling process on the apron to the PDA server. From this server, data are processed to other CDM stakeholders according to their individual needs [5].

The ramp agent has to update TOBT any time it is necessary and keep its value as actual as possible. The crew has to be aware of and agree with this value.

Only CDM related duties were mentioned above. Actually, there are many other duties ramp agent has to fulfil. These duties and responsibilities specifies Ground Operation Manual of Prague airport (airlines/handling companies alternatively). These activities are very wide and it is not possible to mention them all at this point. Anyway, bellow is very brief list. For ramp agents is important to realise that they are supervising and coordinating body on the apron. They are responsible for following set rules and procedures. His duty is not only to warn about the rule breaking, but also to require the correction. According to Aircraft handling, handling procedures methodology of Prague airport, the staff in ramp agent position:

- ✓ controls, supervises and coordinates all activities at the aircraft during its turnaround,
- ✓ is responsible for meeting the turnaround schedule in terms of airlines requirements with focus on meeting turnaround time,
- ✓ is responsible for filling Check list for particular aircraft. Any failing is marked there,
- ✓ has to perform walk around before the aircraft come on stand to prevent from FOD (foreign object damage) occurrence,
- ✓ communicates with flight crew during the whole ramp handling process,
- ✓ is supervising all the activities of all contractors working around the aircraft,
- ✓ consults with cabin crew possibility of passenger boarding,
- ✓ is responsible for meeting required apron safety level around the aircraft,
- ✓ controls and coordinates pushback process, communicates with flight crew,
- ✓ is responsible for service invoicing according to airline requirements,
- ✓ supervises a loading/unloading of dangerous goods and special freight,
- ✓ and many others... [4]

6. ZURICH AIRPORT CASE STUDY

Turnaround coordinator problem was mentioned also at Zurich airport. Introduction of this position was discussed because of an increase in accidents during aircraft turnaround. Both aircraft – mobile equipment and equipment – equipment incidents have risen [7]. Nevertheless, the turnaround coordinator is discussed controversially. On one hand, there is a common accord that establishing reliable person would improve the apron safety significantly. But on the other hand, there is nobody to cover the costs of this personnel.

As a conclusion made by the airport, Zurich will not force the turnaround coordinator implementing for the moment [2]. However, this solution will be kept in mind in case of future comedown.

7. AIRPORT SIZE MATTERS

To support decision making process at Zurich airport, survey about turnaround coordinator issue was executed [2]. Several airports were addressed with little questionnaire. The results are little bit surprising. Survey shows that a turnaround coordinator is rarely required on big airports with significant scope of operation. On the opposite, at some middle-sized airports, there is a ramp agent required by airport regulation.

Among the big airports, London Gatwick is the only one that requires such a position on the apron. Except Gatwick, there are few airports with annual throughput over 20 mil passengers where some airlines practise ramp agent agenda (Frankfurt, Zurich and Vienna). But what is interesting, is the fact that only half of these four airports consider turnaround coordinator as an element which could help to improve safety (Zurich and Gatwick). Personally, it would be interesting to know what are the reasons Vienna and Frankfurt airports not to take ramp agent for a ramp safety guarantee. On the other hand, Rome Fiumicino does not have ramp agent institute but they consider this position as likely to improve safety.

Small and medium size airports with annual number of passenger handled not exceeding 12 mil (Prague, Bangalore, Riga, Turin, Malta and Dubrovnik) uses services of turnaround coordinator. This staff is required both by airport operator and airlines. The only exception is Turin airport. This is the same case as Vienna and Frankfurt airports mentioned few lines above.

The complete results can be found in the Tab. 1.

8. APRON SAFETY QUANTIFICATION

As the turnaround coordinator is not utilised at every airport, the question remains whether this position makes any impact on enhancing apron safety. Within airports mentioned in the previous section, half of them stated that turnaround coordinator's presence is likely to improve safety. The other half stated the opposite. Thus, in order to quantify turnaround coordinator's influence, certain data package must be provided and examined.

8.1. Methodology and definitions

Safety of apron operations can be measured in variety of ways. The operation can be considered as a safe when no accidents, incidents happens before, after and during the turnaround process. Thus, the most advanced method how to assess apron safety is the number of operational disruptions [13]. Any incident that happens on the apron affect safety level negatively. Hence, to illustrate the impact of turnaround coordinator on apron safety, the following method will be applied.

Table 1

Turnaround coordinator survey results [2, 6, Airports' websites]

<i>Airport</i>	<i>PAX handled (mil/2011)</i>	<i>TCO required by certain airline</i>	<i>TCO required by airport</i>	<i>TCO likely to improve safety</i>
Frankfurt	56,44	✓	✗	✗
Munich	37,76	✗	✗	✗
Kuala Lumpur	37,70	✗	✗	✗
Rome	37,65	✗	✗	✓
Seoul	34,00	✗	✗	✗
Gatwick	33,67	✓	✓	✓
Zurich	24,34	✓	✗	✓
Vienna	21,11	✓	✗	✗
Phoenix	20,21	✗	✗	
Stockholm	19,07	✗	✗	✗
Brussels	18,79	✓	✗	✓
Athens	14,45	✗	✗	✗
Prague	11,79	✓	✓	✓
Bangalore	11,59	✓	✓	✓
Riga	5,11	✓	✓	✓
Turin	3,71	✓	✗	✗
Malta	3,51	✓	✓	✓
Dubrovnik	1,35	✓	✓	✓
<i>Sum</i>		<i>11</i>	<i>6</i>	<i>9</i>

First, data in the form of apron incidents will be used from the examined airports. These figures will provide absolute values and as such, they are not suitable for comparison as every airport has different scale of operation. In order to make the data relative, scale of operation must be taken into consideration. For this purpose, number of aircraft movements will be used. Finally, the coefficient *number of incidents per 1 000 aircraft movements* will be calculated and used for comparing the safety level of selected airports. Note that examined airports will represent both airport groups – utilising turnaround coordinator and not utilising.

The second data type (aircraft movements) makes no problem to gain as these data are publicly accessible from the airports' annuals reports. However, the first ones (apron incidents) are not publicly available. This data was gained from the particular departments within investigated airports thanks to either author's close cooperation with airport (Airport A) or good contacts (Airport B).

Prior any computation and analysis, it is necessary to define particular terms used in this section. Above all, safety itself needs to be defined. According to the ICAO Safety Management Manual (SMM), safety is a state in which the possibility of harm to persons or of property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and safety risk management [10]. Next, there is a definition of the key element of apron safety quantification – incident. According to ICAO Annex 13 (Aircraft Accident and Incident Investigation), incident is defined as an occurrence, other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operation [9].

8.2. Dataset and analysis results

Data was gained from two airports. The first airport (Airport A) is Prague airport and represents the apron where turnaround coordinator is applied. Data was provided individually to author on request, however the airport has no problem with publishing of provided figures. The second airport (Airport B) is a representative of non-turnaround coordinator airport. Alike the previous case, the data was

provided on request. However, this airport considers this safety figures as a confidential and sensitive hence Airport B will not be denominated by name. It is one of the top 6 European airports.

Airport A provided data for the period of as much as three years (Tab. 2). There were 77, 76 and 58 apron incidents observed in 2010, 2011 and 2012 respectively. These absolute numbers are decreasing, but the operation is decreasing as well due to crisis. What is the most interesting, is the rate of incidents per 1000 movements. It varies from 0.44 in 2012 to 0.50 in 2011. The coefficient 0.44 means one incident in 2272 aircraft movements.

Table 2

Apron safety figures at Prague airport [8, Airport's own data]

Year	Number of apron incidents	Number of aircraft movements	Coefficient (incidents per 1000 movements)
2010	77	156 052	0.49
2011	76	150 717	0.50
2012	58	131 564	0.44

Airport B provided author with data covering one year period (2012). There were much more apron incidents than at the Airport A as the scope of operation is much higher at this airport. Airport B registered 244 incidents at the apron in 2012. This stands for the coefficient 0.56 incidents per 1000 movements. In another words, one incident per 1785 movements.

The comparison of both airports is shown below (Tab. 3). Even if both airports are different in terms of their annual throughput, their apron safety levels are not significantly different. Of course, certain difference is noticeable, particularly when comparing amount of movements with one incident (2272 and 1785 for Airport A and Airport B respectively) where the difference is almost as much as 500 movements.

This study proves that airport with turnaround coordinator on the apron records higher safety level in terms of apron operations. However, the sample is not broad enough to generalize this assumption.

Table 3

Apron safety figures at airport with/without turnaround coordinator [8, Airports' own data]

	Turnaround coordinator	Number of apron incidents	Number of aircraft movements	Coefficient (incidents per 1000 movements)
Airport A	✓	58	131 564	0.44
Airport B	✗	244	432 407	0.56

9. CONCLUSION

Liberalisation has brought more players in the ground handling market. These players are competing between each other and this competition cuts the costs of their services down. That is definitely right, after all that is one of the points of liberalisation. But afford to win a handling contract has led many companies to save on labour costs.

One of the biggest issues in today civil aviation industry is shortening the turnaround time to absolute minimum in order to rise airport capacity not only in peak hours. This directly interferes with decrease in ground handlers' labour power. Under-staffing combined with time pressure can cause serious damage. Decrease in turnaround time is great idea, but when it comes to decrease in safety level, is time to stop and think if it is worth. No, it is not worth. The very basic rule goes like 'safety first'. And this should be kept even if economical or capacity constraints are here to face. And only if we can ensure required safety level we can make another step – cut down costs, manpower or time.

One of possible approaches to solving this problem is establishing turnaround coordinator position. At many airports this role exists and plays crucial role in turnaround safety. This statement was

confirmed by the data analysis performed within this paper. Even if not dramatically, the safety level is higher at an airport with turnaround coordinator applied than at non-turnaround coordinator airport.

This solution brings extra costs, no doubt about it. But where we want to cut turnaround time down, some extra price must be paid. In this case, the price is one more man on the apron. One more reliable person with clearly declared duties and reliabilities. And at the end of the day, the price could not be as high as it may seem. When it comes to repairing damaged engine, it may take lot more resources. Not only the financial ones, but airline/handler goodwill can suffer. And in most cases, delay refunds, flight cancelation or backup aircraft costs are much higher than few monthly wages more.

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