Chapter 4

Finding of Facts I

A. Choice of 6 July 1998 as the opening date of the new airport

B. Flight Information Display System

C. Hong Kong Air Cargo Terminals Limited

What the Government/Airport Authority/HACTL said……

In response to claims that the new airport was not ready to open and had only opened because of government pressure, Dr TOWNSEND said, "That's not the case at all. No matter how much longer we wait, we still face a fundamental problem of many unpredictable incidents from human nature to technical errors when it comes to actual operation."[1]

Dr Henry TOWNSEND
Former CEO/AA
7 July 1998

"There has always been tremendous pressure to get the facility completed. Our contract stated that the deadline for completion would be 18 August…… We would have liked a few more weeks to commission the system more thoroughly."[2]

Mr Anthony CHARTER
MD/HACTL
7 July 1998

"Instead of commencing operation in April as originally intended, I believe that the opening of the airport in July allowed enough time for preparation. Of course, they are a bit "out of luck" and the computers are a bit out of order. Besides, even we ourselves might not have expected these problems during the preparatory stage."[3]

Mr Donald TSANG
Financial Secretary
8 July 1998

"I have to admit that there are no scientific grounds for the Government to be sure that the new airport will definitely be ready to open on 6 July ……"[4]

Mrs Anson CHAN
Chief Secretary for Administration
21 September 1998

Source:

1 *South China Morning Post, 8 July 1998.*
2 *Hong Kong Standard, 8 July 1998.*
3 *Ming Pao Daily, 9 July 1998.*
4 *Minutes of evidence of the 1st public hearing of the Select Committee, 21 September 1998, page 43.*

4.1 The Select Committee is committed to look into the circumstances leading to the chaos on the airport opening day on 6 July 1998 and the related issues. The key question is: ***Was the new airport ready to open on 6 July 1998***?

4.2 The Select Committee first focused its inquiry on how and why 6 July 1998 was chosen as the opening date of the new airport.

A. Choice of 6 July 1998 as the opening date of the new airport

4.3 The Select Committee notes that April 1998 had been the target opening date of the new airport since the Financial Support Agreements were reached on 30 June 1995. To ensure that the new airport would be ready to open on schedule, the Government initiated the concept of and plan for Airport Operational Readiness (AOR) in 1995.

4.4 On 16 September 1995, Chairman/ADSCOM directed that a paper should be prepared to set out the key tasks involved in drawing up a plan for AOR, and to clarify where responsibilities for the plan should lie.[5]

4.5 According to the paper then prepared by the Economic Services Bureau and NAPCO, "AOR is an agreed state of preparedness for commissioning, operating and maintaining a new airport. To reach this state of preparedness, a detailed plan has to be drawn up by pulling together appropriate elements of the construction, testing, commissioning and training programmes of all relevant parties involved, including Airport Authority, various government departments, franchisees, licensees and other supporting service providers."[6] The paper also identified PAA/AA, ADSCOM, NAPCO, certain government policy branches and departments as key players:[7]

Source:

5 *"Airport Operational Readiness for the new airport at Chek Lap Kok", ADSCOM Paper 45/95 for the meeting on 28 October 1995, paragraph 1.*

6 *"Airport Operational Readiness for the new airport at Chek Lap Kok", ADSCOM Paper 45/95 for the meeting on 28 October 1995, paragraph 3.*

7 *"Airport Operational Readiness for the new airport at Chek Lap Kok", ADSCOM Paper 45/95 for the meeting on 28 October 1995, paragraphs 17 to 24.*

(a) PAA/AA

To be the executive agency fully responsible for drawing up and implementing the AOR plan including the move from Kai Tak to Chek Lap Kok. PAA/AA should submit regular progress and funding reports through NAPCO to ADSCOM.

(b) ADSCOM

To be the overall monitor.

(c) NAPCO

As the executive arm of ADSCOM, NAPCO would monitor the progress and funding position of the AOR plan, liaise with PAA/AA on problem areas and refer matters to policy secretaries and ADSCOM as appropriate for speedy resolution.

4.6 To achieve the state of readiness, individual AOR programmes were drawn up and administered by co-ordinators appointed from AA (8 co-ordinators), Government departments (32 co-ordinators) and AA's business partners (47 co-ordinators). Planning support for Government departments was provided by NAPCO.[8] AA also conducted meetings with the AOR co-ordinators of Government departments and its business partners from 22 January and 4 March 1996 respectively.[9]

4.7 Progress of the AOR programmes was then regularly reported to ADSCOM which, the Select Committee finds, should have been well aware of the progress through at least the following means:

(a) Airport Operational Readiness Status Reports by AA;

Source:

[8] *"Airport Operational Readiness Status Report", Annex A to ADSCOM Paper 39/96 for the meeting on 22 June 1996, paragraph 2.*

[9] *"Airport Operational Readiness for the New Airport at Chek Lap Kok", ADSCOM Paper 28/96 for the meeting on 4 May 1996, paragraphs 8 and 10.*

(b) Weekly Situation Reports (SITREPs) by NAPCO;

(c) Verbal reports by AA Management at ADSCOM Meetings;

(d) Verbal reports by D/NAPCO and Consultant Project Manager/NAPCO (CPM/NAPCO) at ADSCOM Meetings; and

(e) Views of ADSCOM members who are also members of AA Board.

4.8 Chairman/ADSCOM was further assisted by the "Chairman's Brief" prepared by NAPCO for each ADSCOM Meeting.

4.9 From August 1997, ADSCOM started to consider seriously whether April 1998 was a realistic airport opening date. This subject was repeatedly discussed at ADSCOM Meetings from September 1997 to January 1998. During this period, various assessments of AOR for the April opening date were made:

(a) Joint review of the AOR process by NAPCO and AA Management (ADSCOM Paper 34/97 presented on 20 September 1997);

(b) Assessment by AA Management (ADSCOM Paper 33/97 presented on 20 September 1997);

(c) Assessment by AA Management (ADSCOM Paper 36/97 presented on 13 October 1997);

(d) Assessment by AA Management (ADSCOM Paper 44/97 presented on 3 November 1997);

(e) Audit by the 11 in-house professionals from WB, NAPCO, Electrical and Mechanical Services Department (EMSD) and Information Technology Services Department (ITSD) (Audit done from 18 September 1997 to 7 October 1997 and report issued on 28 November 1997);

(f) Assessment by Deputy Chief Project Manager/NAPCO (DCPM/NAPCO) (submitted to D/NAPCO on 14 November 1997);

(g) Assessment by CPM/NAPCO (submitted to D/NAPCO on 1 December 1997);and

(h) Further assessment by the 11 in-house professionals from WB, NAPCO, EMSD and ITSD (December 1997).

4.10 For the ADSCOM Meeting on 20 September 1997, members of ADSCOM were presented with the assessments mentioned at paragraph 4.9 (a) and (b) above (ADSCOM Papers 33/97 and 34/97). These assessments showed that all concerned were fully aware of the importance of allowing sufficient time for the testing and commissioning of the systems, the completion of physical works, trials, and the training of staff of AA, Business Partners and the Government, in advance of AOD. The "key milestones" described by NAPCO as "minimum critical requirements" leading to the target airport opening date on 1 April 1998 identified in ADSCOM Paper 34/97 are as follows:

• Start of AMD trainer training	24 weeks prior to opening = 1 October 1997
• Initial AMD access to PTB and Airport Operations Control Centre (AOCC) facility to commence staff training	22 weeks prior to opening = 15 October 1997
• Start of trainer training for Business Partners and Government	18 weeks prior to opening = 15 November 1997
• AMD access to AOCC facility and systems, and first trial areas and systems	18 weeks prior to opening = 15 November 1997

• Final handover of Government PTB areas and key business partner PTB areas for fit-out	16 weeks prior to opening = 1 December 1997
• Start of staff training in advance of first trial by business partners and Government	14 weeks prior to opening = 15 December 1997
• Unimpeded access to first trial areas and systems by business partners and Government	12 weeks prior to opening = 1 January 1998
• First trial	10 weeks prior to opening = 15 January 1998
• Integrated systems fully tested and commissioned	6 weeks prior to opening = 15 February 1998

4.11 At that meeting, members of ADSCOM expressed concern about the availability of systems, the delay of PTB construction works, and its impact on training and trial activities. Chairman/ADSCOM instructed that AA should provide a further assessment for the following ADSCOM Meeting so that ADSCOM might arrive at a conclusion on whether 1 April 1998 was a realistic opening date.[10]

4.12 On 13 October 1997, AA Management presented a further assessment to ADSCOM reiterating its confidence in achieving the target airport opening date. However, in the Select Committee's view, there were contradictory statements in the paper.[11] While it was stated that "There is little possibility of HACTL being ready to meet a 1 April opening", AA Management was

Source:

[10] *Notes of the 170th ADSCOM Meeting, 20 September 1997.*

[11] *"Airport Operational Readiness: Assessment of Ability to Open the Airport in April 1998", ADSCOM Paper 36/97 for discussion at the meeting on 13 October 1997, paragraphs 17 and 18.*

nevertheless confident that "the key milestones and critical activities essential for the new airport to open on 1 April 1998 can be achieved." While reporting that HACTL "considered that their chances of being ready for a late April opening date are 50/50", AA Management suggested that "an opening date in the last week of April will provide much greater confidence that sufficient air cargo handling capacity will be available". The confidence of AA Management to meet an April opening date is the more questionable since CEO/AA reported at the same ADSCOM Meeting that on systems, the full situation would not be known until end of December 1997/early January 1998.[12]

4.13 On training and trials, Chairman/ADSCOM was not satisfied with CEO's response as he could not provide an assurance that there would be adequate time for the smooth implementation of the training programme. Chairman/ADSCOM therefore instructed that AA should provide an updated assessment of AOR, and in particular, provide an assurance on systems integration, training and trials.[13]

4.14 At the ADSCOM Meeting on 24 October 1997, ADSCOM noted that the AR opening date could not be advanced to April 1998. On the mismatch between the commissioning dates of the new airport and AR, individual members of ADSCOM expressed different views:

(a) D/NAPCO said it would be difficult to press the Mass Transit Railway Corporation (MTRC) for an earlier date;

(b) S for T said while contingency transport arrangements could be made to fill the gap between the two dates, there would be no 100% assurance in the contingency measures. He suggested considering opening the airport on 1 July 1998, the first anniversary of the establishment of the Special Administrative Region (SAR);

Source:

[12] *Notes of the 171st ADSCOM Meeting, 13 October 1997, paragraph 18.*

[13] *Notes of the 171st ADSCOM Meeting, 13 October 1997, paragraphs 16 to 18 and 28.*

(c) FS pointed out that if the airport opening date was deferred, the public might be disappointed and even perceive that as a major failure of the SAR Government; and

(d) S for Tsy pointed out that a deferral of the airport opening date would result in loss of revenue to AA and to the economy as a whole.

4.15 Chairman/ADSCOM considered that the proposal of opening the airport on 1 July 1998 might warrant further thoughts. Nevertheless, she instructed that all possible options should be examined carefully and the findings be presented to ADSCOM at the following meeting.[14]

4.16 At the ADSCOM Meeting on 3 November 1997, members of ADSCOM discussed in depth the AA's assessment that the physical works, system commissioning and integration and staff training were on target for an April opening date.[15] Despite AA's assurances, Chairman and members of ADSCOM expressed concern about the progress in these three areas. The meeting concluded that NAPCO should prepare a checklist of issues to be answered by the AA Board before ADSCOM made a firm recommendation to the Government on the airport opening date.[16]

4.17 At the Special ADSCOM Meeting on 7 November 1997, DCA attended the meeting for the first time and raised his concern about systems integration, the compressed and unrealistic training programme and problems within the AA Management. He had no confidence in AA's ability to open a functional airport in April 1998. He was also against the idea of opening the airport without AR as that would invite public criticism.

Source:

[14] *Notes of the 172nd ADSCOM Meeting, 24 October 1997.*

[15] *"Airport Operational Readiness: Assessment of Ability to Open the Airport in April 1998", ADSCOM Paper 44/97 for discussion at the meeting on 3 November 1997, paragraph 3.*

[16] *Notes of the 173rd ADSCOM Meeting, 3 November 1997.*

4.18 On systems integration, Chairman/ADSCOM got the impression that the standalone systems would be available for airport operations. S for W said that his study team had found that the systems were running behind schedule, but the problem could be resolved.

4.19 On training, D/NAPCO pointed out that the training programme developed by the Airport Management Division of AA had not been effectively implemented as the required systems, facilities and manuals were not available on time.

4.20 On the problems within the AA Management, S for W pointed out that CEO/AA kept making promises to ADSCOM, but there was no concrete evidence that the promises were being carried out. D/NAPCO said that the joint study carried out by NAPCO on AA's AOR programme had in effect forced the Airport Management Division and Project Division to start talking to each other, which was something they should have done months ago. Another problem with AA pointed out by SES was that it kept changing its plans.

4.21 Chairman/ADSCOM found that the AA was qualifying their statements with provisos all the time, and that it would be difficult for ADSCOM to make a decision on the airport opening date on the basis of provisos. She considered it extremely risky to go for an April opening date. However, it was risky also for June; plus there was the additional problem of maintaining the momentum.[17]

4.22 On 15 November 1997, Chairman/ADSCOM wrote to Chairman/AA expressing ADSCOM's serious concern "as to whether April 1998 is a realistic opening date since the confidence of the Management is not entirely borne out by actual progress on the ground."[18] The main areas of concern highlighted were as follows:

(a) Works progress against the Integrated Accelerated Programme (IAP) was behind schedule;

Source:

[17] *Notes of the Special ADSCOM Meeting, 7 November 1997.*

[18] *Letter dated 15 November 1997 from Chairman/ADSCOM to Chairman/AA.*

(b) Delays in systems integration;

(c) Training and trials programme was so compressed by the delays in works progress and systems integration that it had to be redeveloped; and

(d) Progress of the key business partners and franchisees, e.g. HACTL, was not reassuring.

4.23 Chairman/ADSCOM further stated in the letter that the aim "must be to have an airport which is ***safe, smooth and efficient*** on its opening, commensurate with the standard expected of a world class airport which Hong Kong can be proud (of)……. A good deal is at stake in ***getting the opening date right***." Chairman/ADSCOM also requested the AA Board to make a recommendation on the airport opening date. She also emphasised that "***the date, once announced, will be irreversible***."

4.24 At the Special ADSCOM Meeting on 8 December 1997, Chairman/ADSCOM asked for an updated assessment of the airport opening date. Some members expressed their concern as follows[19]:

(a) Flight Information Display System (FIDS)

FIDS Build 1.5 had not gone through the Factory Acceptance Test (FAT) or Site Acceptance Test (SAT) and its satisfactory level could only be ascertained by 19 January 1998. Build 2.0 which provided for the full integration had just been delivered to AA and would be subject to testing. If Build 2.0 did not work, individual components of FIDS would have to be operated on a standalone mode. However, AA Management had not prepared the procedures to cater for such a situation and would only decide by the end of December 1997 whether Build 2.0 or standalone mode would be operate on AOD.

Source:

[19] *Notes of the Special ADSCOM Meeting, 8 December 1997.*

(b) Training

As Build 2.0 had just been delivered on site, it had to go through testing before training could start. Moreover, AA's business partners were waiting for the announcement of the airport opening date before starting their recruitment and training programmes. Indeed, there were many vacancies in different areas of airport operations, for example, in ramp handling activities, airlines, HACTL and security staff etc. These staff would also have to be trained.

(c) HACTL

It was not certain whether HACTL could achieve 50% of its operational capacity by April 1998. DCA doubted whether even a 50% air cargo handling capacity of HACTL would be sufficient for AOD.

(d) Track record of AA Management

There had been slippages against AA's declared targets and sometimes, AA even tried to cover up the slippages.

4.25 On FIDS, S for W said his staff had assessed Build 2.0 on delivery and believed that there would not be much problem. He was confident that the system would be all right and would not present a risk for opening the airport in April 1998. In his opinion, integration of FIDS by April was possible.

4.26 On training, S for W was concerned about training in FIDS which involved several thousand airline staff manning the 144 check-in counters. He had asked AA for the plans and was satisfied that such training could be accomplished.

4.27 On HACTL, S for W said that the problem with the cargo-handling system at HACTL had been resolved. The outstanding problem was HACTL's negotiation with its main contractor on the acceleration programme.

4.28 Chairman/ADSCOM stated that she was unable to take AA simply on trust because of its track records, as papers presented by AA always painted a better picture than reality warranted.

4.29 While S for W had over 90% confidence in an April opening date, Chairman/ADSCOM, SES and DCA considered that there was a risk in going for an April date.

4.30 At the AA Board Meeting on 9 December 1997, members of the Board and the Management expressed their views on achieving an April opening date:[20]

(a) S for Tsy expressed reservations on achieving an April opening date;

(b) SES said that members of the Board would have to be further convinced to be reasonably confident about the achievement of an April opening date;

(c) DCA expressed concern about the adequacy of time for staff training before April 1998;

(d) S for W felt that achieving an April opening date was not impossible but in view of the present progress, there were problems in a few areas which needed to be tackled so as to enhance the confidence level of some members;

(e) CEO/AA said that AA Management was highly confident in achieving an April opening date. It was fully aware that possible problems might arise and was prepared to expeditiously resolve them along the way. The staff members and business partners were all dedicated to meet that target;

Source:

[20] *Minutes of the AA Board Meeting, 9 December 1997.*

(f) PD/AA said that the Project Team would be able to achieve an April opening date in view of the fact that the physical works would be sufficiently ready to enable the Airport Management Division and business partners to proceed with their follow-on work; and

(g) AMD/AA echoed the view of PD/AA and further confirmed that the Airport Management Division would be ready for airport opening at the end of April 1998.

4.31 In conclusion, Chairman/AA said that considering the current progress and with faith, he was convinced that the new airport could be opened for safe and efficient operation in April 1998.

4.32 On 10 December 1997, Chairman/AA replied in writing to Chairman/ADSCOM stating that the AA Board had undertaken a very thorough review of progress in all areas, with particular reference to ADSCOM's areas of concern. ***The Board was satisfied that "the airport can be ready for safe, smooth and efficient operation on an appropriate date in the last week of April"***.[21]

4.33 On 17 December 1997, Chairman/ADSCOM replied to Chairman/AA in writing stating that despite the additional information and assurance provided by the AA Management, the Government members of the AA Board expressed continued concern in various areas. She pointed out that as a number of key milestones would be coming up in the following few weeks, both AA and the Government would be in a better position to assess whether an April opening date would be achievable. She requested the AA Board to continue to monitor developments with a view to reaching a firm conclusion on the airport opening date in early January 1998.[22]

Source:

[21] *Letter dated 10 December 1997 from Chairman/AA to Chairman ADSCOM.*

[22] *Letter dated 17 December 1997 from Chairman/ADSCOM to Chairman/AA.*

4.34 At the Special ADSCOM meeting on 2 January 1998, Chairman/ADSCOM asked whether April was a realistic date. Members of ADSCOM responded as follows[23]:

(a) S for W replied in the affirmative;

(b) D/NAPCO replied in the affirmative and said this was subject to everyone pulling full weight;

(c) SES said he had reservations, given AA's track record and that there was no guarantee that FIDS would work. He also said that the hotel and tourism industries had expressed very strong views that the new airport should not open without the service of AR;

(d) S for T said that contingency transport plans were being actively developed to fill the gap before the availability of AR. However, he emphasized that the contingency transport situation, while manageable, would not be entirely satisfactory;

(e) S for Tsy said that although the April date remained achievable, there was still a need to assess the probability of this not being achieved and the downside risks in that case. On HACTL, he said that there was still the undecided question on acceleration.

4.35 The Select Committee finds that, having considered the problems of an April opening date, ADSCOM then proceeded to weigh the pros and cons of deferring the opening date to June. Summing up, Chairman/ADSCOM said that whether the new airport would be ready in April 1998 remained a question mark and she considered that there was too much risk attached to an April opening. This was based on the overall readiness of the new airport, including physical works, systems, franchisees and the availability of AR in June. She remarked that the Government had the responsibility of making a decision which

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Source:

[23] *Notes of the Special ADSCOM Meeting, 2 January 1998.*

would give Hong Kong an airport of a standard that people had come to expect, supported by efficient transport arrangements. ***Chairman/ADSCOM then decided to recommend a June opening date to CE[24]. There is no record of an objective assessment of the readiness of the airport for a June opening.***

4.36 ADSCOM then considered the choice between 21 June and 1 July as the exact opening date. During the discussion, it was agreed that the blame should not be put on AA for the deferral. Rather, the advantage of the availability of AR in June was to be emphasized. It was further suggested that 1 July would allow more time for commissioning of AR and for publicity events. Chairman/ADSCOM finally decided that 1 July be adopted as the ceremonial opening date to be followed by the functional opening. ***It is clear to the Select Committee that the deferral of the opening was due to the unreadiness of the airport.*** The subsequent announcement that the availability of AR in June was the reason for the deferral was misleading the public to that extent.

4.37 At the Special ADSCOM Meeting on 8 January 1998, NAPCO prepared a discussion paper on "Announcement of Airport Opening" recommending 6 July 1998 as the functional opening date for the following reasons:

(a) it would cause difficulties for security and staffing arrangements if the gap between ceremonial opening and functional opening was shorter than four or five days; and

(b) it was desirable to avoid a weekend for the overnight move.

4.38 6 July 1998 was recommended as it was a Monday and the earliest date after 1 July that met both requirements. The proposal was adopted by ADSCOM and put forward to CE and then the Executive Council.

Source:

[24] *Notes of the ADSCOM Meeting, 2 January 1998, paragraph 22.*

4.39 Having carefully examined the notes of ADSCOM Meetings, and heard the evidence of witnesses thereon, the Select Committee takes the view that while it was right for the Government to initiate the concept of and plan for AOR and ensure that relevant bodies, such as AA and NAPCO, were fully aware of the importance of achieving the state of readiness on AOD in accordance with the plan, at the end of the day after AOD had been determined it has failed to follow through its own concept of AOR.

4.40 It is the view of the Select Committee that ADSCOM itself had followed the concept of AOR reasonably closely up to the decision to defer the airport opening date during the 2 January 1998 meeting. Chairman/ADSCOM had used AOR as a yardstick to assess the overall readiness of the new airport, including physical works, systems, franchisees and the availability of AR. In her evidence before the Select Committee on 21 September 1998, Mrs Anson CHAN, Chairman/ADSCOM said that she had based her decision to defer the airport opening date on "gut feeling", the reports made by the parties concerned and the track record of AA.

4.41 ***The Select Committee considers that Chairman/ADSCOM was plainly right to defer the airport opening date***. However, this makes it all the more astonishing that when ADSCOM came to choosing an appropriate airport opening date for recommendation to the Executive Council, the same careful process was not followed through using the same concept of AOR as a yardstick.

4.42 The absence of a clear and objective assessment invited questions as to whether the decision was imposed for some compelling reasons. In the sensitive climate of the newly established SAR, political consideration was an obvious candidate.

4.43 The Select Committee has investigated this possibility by examining documentary evidence and witnesses, and come to the conclusion that there is no basis for saying that there were any directives from Beijing. Although it was indeed remarked in ADSCOM that an early July opening date would tie in with the celebrations of the first anniversary of the SAR, (paragraphs 4.14(b) and 4.15 above), this did not feature as a reason for deferring the April date to June and then July.

4.44 The failure of ADSCOM to make or ask the relevant bodies to make assessments of AOR for a July opening date applying the same critical measures used in the September-December 1997 period had far reaching results. The operational readiness of FIDS and HACTL had throughout been identified as the two critical items. Yet ADSCOM did not appear to have reassessed whether these critical items would meet AOR for a July opening date. As it turned out, and the Select Committee so finds, they were not ready, with all too visible consequences. The saga of these two critical items will be explored in the following sections of this chapter.

4.45 Invited by the Select Committee to explain the grounds for ADSCOM's confidence in a June/July opening date, Mrs Anson CHAN, Chairman/ADSCOM, said in the public hearing on 21 September 1998 that[25]:

(a) there were no scientific grounds for the Government to be sure that the new airport would be ready to open on 6 July;

(b) the Government had made the decision with regard to the progress of works, training and testing, and then came to a balanced view that 6 July was an acceptable and feasible opening date; and

(c) the Government considered that as the AA Board and Senior Management were confident of the new airport being ready to open in April, a deferral of three months should give more time for all parties concerned to be even better prepared.

4.46 The Select Committee does not accept that an opening date for the safe, smooth and efficient operation of the new airport can be decided on without a thorough scientific assessment. The degree of uncertainty would have been considerable, and ADSCOM should not have taken such a risk.

Source:

[25] *Minutes of evidence of the 1st public hearing of the Select Committee, 21 September 1998, pages 43 and 44.*

4.47 The Select Committee could find no evidence showing that the Government had made the decision with regard to the progress of works, training and testing. As to the suggestion that ADSCOM was persuaded by the confidence of AA, there is ample evidence from the notes of ADSCOM Meetings that Chairman and members of ADSCOM were acutely critical of AA's track record and took the view that papers presented by the AA painted a better picture than reality warranted. This was, in fact, one of the factors considered by Chairman/ADSCOM when she decided to defer the airport opening date (paragraph 4.40 above). The evidence of contemporaneous records shows beyond doubt that Chairman/ADSCOM had never accepted AA's assessment on face value, and in spite of the AA's repeated assurance, she doubted the readiness of the airport for opening in April 1998. The Select Committee is unable to find any basis for her confidence that a further three months would have been sufficient to make the new airport ready for safe, smooth and efficient operation. It is not a matter of the Select Committee agreeing or disagreeing with her assessment. Rather, on the evidence, ***there was no conscious, objective or critical assessment at all at the point the June/July opening date was fixed***.

4.48 In her evidence before the Select Committee, Mrs Anson CHAN emphasized repeatedly that although AOD was fixed, if there was "any indication" that the airport was not ready for opening thereafter, she would not hesitate to recommend to the CE to defer the opening. Yet the Select Committee could not find any real or serious attempt to monitor or assess for that purpose. On the contrary, there is clear and overwhelming evidence to suggest that whatever the CS might have thought, everybody involved firmly understood that once fixed on 6 July 1998, AOD could not be changed. The airport had to open on that date, and the only alternative was to do as much as possible to make it as ready as possible.

B. Flight Information Display System (FIDS)

4.49 The Flight Information Display System (FIDS) is the single most important component of the information systems installed at PTB. It is at the heart of information systems, providing vital information for essential airport terminal operations including passenger handling and baggage handling. Consequently when FIDS fails, a huge array of problems and chaos may occur in PTB.

Problems on Airport Opening Day

4.50 According to AA, the operation of FIDS on 6 July 1998 has experienced a series of problems. As early as 7:00 am, duty staff reported that inconsistent flight information was displayed in the monitors at different locations. About 80% of the boarding gates were either unable to display correct flight information or could not display anything on them. Then FIDS workstations' performance started to slow down and the system was unable to handle all the data input by the Apron Control Centre (ACC), Airport Operations Control Centre (AOCC) and Baggage Handling System (BHS). At 10:30 am, host server of FIDS was down. The system was rebooted and then usable at 11:00 am. However, the performance problem of FIDS workstations continued. System error messages popped up 4 to 8 times for each entry. As a result, update of flight information could not be done on time. This led to the delays in the display and dissemination of flight information, delays in gate and stand allocation. Passengers and airlines therefore could not receive prompt and updated information about the location of arriving and departing aircraft.

4.51 The problem log of FIDS on 6 July 1998 as compiled by AA is in **Appendix 11**.

4.52 Were these “teething problems”? Or was FIDS in fact not ready for operation on 6 July 1998?

System description

4.53 The FIDS serves more functions than its name suggests. FIDS itself comprises:

(a) the core database and display system;

(b) the Terminal Management System (TMS) which deals with the allocation of incoming aircraft to vacant stands; and

(c) the hardware, such as monitors and LCD boards, and others.

4.54 FIDS also integrates with the following systems:

(a) the Baggage Handling System (BHS) - flight information is forwarded to BHS which allocates laterals for departing baggage and reclaim belts for arriving baggage. Information on lateral and reclaim baggage allocations is then sent back to FIDS for display on monitors and LCD boards;

(b) the Common User Terminal Equipment (CUTE) workstations - local display monitors at check-in desks, gate desks and transfer desks; and

(c) the Airport Operational Database (AODB) - flight information is forwarded to AODB for onward distribution to other systems.

4.55 The components of FIDS and its interface with other systems are illustrated in **Chart 4.1.**

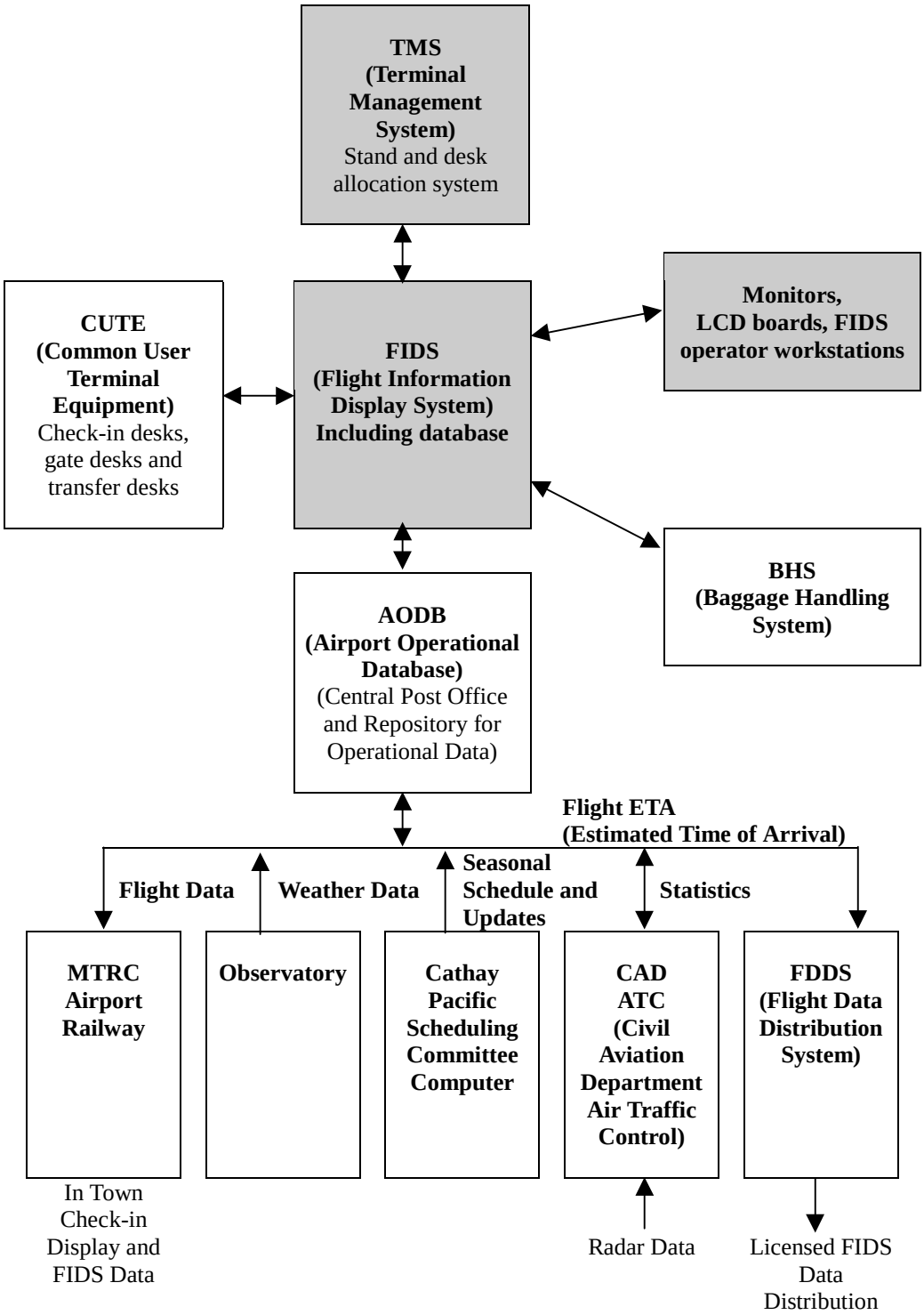

Chart 4.1 Flight Information Display System and its interface with other system

Legend:

Components of FIDS

Other systems

Source:
Airport Authority

System development (June 1995 to April 1997)

4.56 On 15 June 1995, the PAA Board approved the award of the contract for FIDS (C381) to GEC (HK) Limited.[26] On 2 August 1995, C381 was formally awarded to the company in the sum of HK$231.7 million.[27] GEC, the main contractor, was to be responsible mainly for the supply, installation and commissioning of LCD Boards, the installation of display monitors, other hardware and overall project management. Its subcontractor, Electronic Data Systems Limited (EDS), was to be responsible mainly for the development, supply, installation and commissioning of the system software. In December 1995, AA also appointed a specialist consultant, Centre for Software Engineering Limited (CSE), to monitor the quality control of the software developed by EDS.

4.57 In September 1995, Mr TSUI King-cheong joined AA as the Project Manager, E & M Works of C381 and a number of other contracts. According to Mr TSUI, however, he only became more involved in C381 in the latter part of 1996.[28]

4.58 In October 1995, GEC submitted the final Works Programme which included a schedule of milestones on the completion of procurement, installation, testing, commissioning, integration and training in respect of FIDS. According to the schedule, final design of the software to the satisfaction of the PM would be completed by 31 January 1996, and all manufacturing phase testing and commissioning by 29 November 1996. All plant was to be delivered to the site at Chek Lap Kok by 31 December 1996.[29] As fully demonstrated before the Select Committee, this programme was to suffer slippages time and again.

Source:

[26] *Minutes of the 75th PAA Board Meeting, 15 June 1995, paragraph 2.3.1.*

[27] *Project Committee Paper 10/98 for the meeting on 12 January 1998, paragraph 3.*

[28] *Witness statement of Mr TSUI King-cheong to the Commission of Inquiry on the New Airport, 11 September 1998, paragraph 14.*

[29] *Works Programme of GEC, October 1995.*

4.59 Notwithstanding the 1995 Works Programme, GEC later claimed that they could not understand from the Particular Technical Specification (PTS) what the AA's requirements for FIDS were. In May and July 1996, a series of meetings were held between GEC, EDS and AA to discuss AA's requirements as set out in the PTS.[30] Between October 1995 and these meetings, there was no evidence of discernible progress.

4.60 On 27 August 1996, Mr Paul EVANS, AA's Construction Engineer, visited EDS's site at Hook, UK, with representatives of GEC and EDS. He concluded that EDS did not have a FIDS product suitable for an airport of the size and complexity of the new airport at Chek Lap Kok. EDS confirmed this but suggested that a near-suitable product could be made by combining several existing systems, such as those used at Macau and Birmingham. Mr EVANS considered that combining one small airport system with another less appropriate small airport system would not provide an adequate solution, and for this reason EDS had not taken any obvious steps to do so.[31]

4.61 In November 1996, GEC and EDS submitted the final version of the System Segment Specification (SSS) reflecting the modified specification and needs of AA.[32] This was accepted by AA as the document EDS would base on to develop the software of FIDS. Thus some 15 months after the award of contract, EDS was to begin writing a brand new software from scratch.

4.62 On 5 December 1996, Dr Henry TOWNSEND, CEO/AA, and Mr TSUI King-cheong, PM(E&M Works)/AA, visited EDS's office in the UK to identify positive steps to improve on communication with EDS and progress of works. A series of action was agreed upon, one of which was that EDS committed itself to completing the works by November 1997.[33]

Source:

30 *Witness statement of Mr TSUI King-cheong to the Commission of Inquiry on the New Airport, 11 September 1998, paragraphs 15 and 16.*

31 *"C381 FIDS – EDS Site Visit", page 2.*

32 *Project Committee Paper 10/98 for the meeting on 12 January 1998, paragraph 4.*

33 *"Visit to EDS UK on 5 December 1996 – Subcontractor to GEC HK Contract C381 FIDS", page 1.*

4.63 At AA's request, CSE, AA's consultant, conducted an audit visit to EDS's office at Hook from 3 December to 9 December 1996. According to the report of the audit visit[34], the system that was being developed by EDS was well designed and well capable of accommodating the throughput of the new airport. However, slippage from the 1995 Works Programme has become evident. In EDS's view, which was considered not unreasonable by CSE, this had been caused by working to a specification which had been changing and in which many issues needed clarification. Indeed, in CSE's view, the main problems were caused by the failure of AA and EDS to agree on how the requirements should be interpreted. CSE recommended, inter alia, that AA should consider freezing the specification and consider EDS's proposals for phased delivery of the system.

4.64 In December 1996, it was decided that the Project Division of AA required support on the testing and commissioning of the systems contracts, including C381. A System Task Force, accountable to Mr Douglas OAKERVEE, PD/AA, Mr Chern HEED, AMD/AA, and Mr Raymond LAI, FCD/AA, was then set up. It was headed by Mr Kiron CHATTERJEE, HIT/AA. Its role was to act as the Airport Management Division's expert representatives in working with the Project Division to ensure that the technical operational aspects of the systems were fully tested before handling over to the Airport Management Division for use.[35]

4.65 As time went on, more milestones listed in the 1995 Works Programme were missed by EDS. It would appear that in about March and April 1997, recovery programmes were discussed between Mr TSUI and Mr Bill HURST, GEC's project manager. According to AA documents, on 13 March 1997, EDS submitted a Recovery Programme which showed a completion date of 9 January 1998 but at the expense of deferring a considerable number of functionalities. This represented 2 months' slippage from EDS's commitment (paragraph 4.62 above). On 2 April 1997 a draft revised Recovery Programme was submitted with a completion date of 2 January 1998 but at the expense of

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Source:

[34] *"Report of CSE's Audit Visit to EDS, Hook, 3-9 December 1996" issued on 18 December 1996.*

[35] *Memo dated 20 December 1996 from Mr Raymond LAI, FCD/AA and Mr Chern HEED, AMD/AA, to Mr Douglas OAKERVEE, PD/AA.*

FAT and Site Acceptance Test (SAT) being run concurrently, which Mr TSUI considered unacceptable.[36]

4.66 The Select Committee notes that up to this point in the design and development of FIDS, there was little involvement of the Airport Management Division, the user department of FIDS. The setting up of the System Task Force in December 1996 with representatives from the Project Division, Airport Management Division and IT Department appeared to be of limited effect in ensuring that the Airport Management Division's views were fully taken into account.

4.67 On 3 April 1997, Mr HEED, wrote to Mr OAKERVEE, raising the Airport Management Division's objection, from a user point of view, to EDS's proposal to defer some functionalities. He urged the Project Division not to accept the proposal but to push EDS to recover all lost ground by airport opening. He also suggested the Project Division to consider, as a contingency plan, approaching another contractor, Ferranti, for development of the software. In conclusion, he stated that as the ultimate end user of the system, the Airport Management Division very much wanted to be involved early to assist in confirming the acceptability of functionality of the system.

4.68 The Select Committee accepts the evidence of witnesses that the letter reflected the views of staff of the Airport Management Division and IT Department. However, no positive response was made by the Project Division who continued to be AA's representative in dealing with GEC and EDS on FIDS.

4.69 On 8 April 1997, Mr Robert DUNSDON, Design Manager of AA reporting to Mr TSUI sent a E-mail to Mr TSUI stating that it was worth pressing GEC very hard to consider the alternative offered by Ferranti. He considered opting for Ferranti a "low risk" alternative while EDS was a "high risk" one. This was rejected by Mr TSUI because EDS had advised that the Ferranti solution would involve more effort and greater risk than EDS's solution.

Source:

[36] *Letter dated 7 April 1997 from Mr TSUI King-cheong, PM(E & M Works)/AA, to Mr Bill HURST, PM/GEC, paragraph 3.*

4.70 Ms Vivian CHEUNG, Manager (Terminal Systems) of the Airport Management Division of AA, a computer scientist, a computer scientist, also expressed reservation on EDS's ability to develop a stable system from scratch and deliver it to AA in time for airport opening. She considered that even if EDS was able to do so, it would take AA at least two years to debug the system. She also pointed out that Ferranti had a ready made package product. In view of the limited time available, however, Ferranti's own estimate was that only 80% of the functions of FIDS could be delivered to AA before the target airport opening date in April 1998.[37]

4.71 From 9 April to 11 April 1997, Mr TSUI visited EDS's office in the UK with representatives of CSE and GEC. During the visit, Mr TSUI on behalf of AA agreed on a new approach for the delivery of the system. The whole system was to be divided into a number of "builds" or software modules each with a target date for delivery. **Table 4.1** shows the different "builds" and their target delivery dates as agreed in April 1997. The integrated FIDS system, "Build 2.0" was to be delivered by 31 October 1997. If delivery was on target, this might have just saved EDS from breaking its original commitment of completing all works by November 1997. ***In the opinion of the Select Committee, this new agreement was a compromise due to slippages which had already occurred. It was, moreover, a compromise reached without full consultation with the Airport Management Division as the end user.*** However, according to Mr TSUI, the breaking down of the system into its major component parts would make it easier for AA to manage and monitor the project, and for EDS to progress the software development as each build could be tested separately before integration.[38] The FIDS Project Review Statement dated 11 April 1997 was then issued to wrap up the agreed actions and list out the dates for target delivery of each of the software builds. The dates were subsequently superseded by the EDS Baseline Programme issued on 30 April 1997.[39]

Source:

[37] *E-mail dated 16 April 1997 from Ms Vivian CHEUNG, Manager(TS)/Airport Management Division/AA, to Mr Chern HEED, AMD/AA.*

[38] *Witness statement of Mr TSUI King-cheong to the Commission of Inquiry on the New Airport, 11 September 1998, paragraph 21.*

[39] *Letter dated 23 December 1998 from Mr TSUI King-cheong, PM(E & M Works)/AA, to Clerk to the Select Committee, page 1.*

4.72 As will be seen, the target delivery dates were revised repeatedly thereafter. The revisions are shown in **Table 4.1**.

Builds	**(A) Functions**	**(B) Target delivery date (as at 30/4/97)**	**(C) Revised target delivery date (as at 17/6/97)**	**(D) Revised target delivery date (as at 16/9/97)**	**(E) Revised target delivery date (as at 5/12/97)**	**(F) Actual delivery date to CLK**
Build 1.0	Provides interface mainly with BHS.	Delivered	-	-	-	1/4/97
Build 1.1	Provides interface with AODB.	30/5/97	Delivered	-	-	17/6/97
Build 1.2	Provides the core Host server data processing functionality.	14/7/97	31/7/97	Delivered	-	2/9/97
Build 1.3	Integrates the Flight Display System into Build 1.2.	1/9/97	8/9/97	7/10/97	Delivered	8/10/97
Build 1.4	Provides the CUTE workstation interface.	30/7/97	15/8/97	Delivered	-	2/9/97
Build 1.5	Integrates the Stand/Gate/Desk allocation system with Build 1.2.	30/9/97	18/9/97	3/11/97	Delivered	5/11/97 (early release) 5/12/97 (final release with Build 2.0)

Builds	**(A) Functions**	**(B) Target delivery date (as at 30/4/97)**	**(C) Revised target delivery date (as at 17/6/97)**	**(D) Revised target delivery date (as at 16/9/97)**	**(E) Revised target delivery date (as at 5/12/97)**	**(F) Actual delivery date to CLK**
Build 2.0	Involves the integration of Builds 1.3, 1.4, 1.5 to provide a fully integrated FIDS system.	31/10/97	21/10/97	4/12/97	5/12/97 (early version) 15/1/98 (final version)	5/12/97
System Integration	-	9/2/98	-	-	-	SAT 23/2/98 to 19/3/98
Build 2.1	Incorporates the deferred items into the FIDS system.	13/2/98	1/3/98	7/4/98	-	Target delivery in phases between March to May 1998

Table 4.1 Delivery dates of FIDS Software Builds

Source:

(A) FIDS Project Review Statement, 11 April 1997.
(B) EDS Baseline Programme, 30 April 1997.
(C) Notes of AA Board Workshop on Progress Review for C381 – FIDS, 17 June 1997.
(D) Notes of the Presentation on the Current Progress of C381 – FIDS, 16 September 1997.
(E) AA/GEC Agreement, 5 December 1997.
(F) Letter dated 23 December 1998 from Mr TSUI King-cheong, PM(E & M Works)/AA, to Clerk to the Select Committee.

4.73 During the internal discussions at the ADSCOM Meeting on 12 April 1997, Mr Billy LAM, the then D/NAPCO, raised his concerns on the progress of systems installation and integration, especially that of FIDS. He remarked that the software contractor, EDS, was not performing as expected. AA's project manager had gone to UK and developed with EDS a programme to enable FIDS to perform the essential functions on airport opening.[40]

4.74 Mr Douglas OAKERVEE, PD/AA, reported at the same meeting that AA had taken strong steps in the previous two months with GEC and EDS. The situation was brought about by EDS's staff problem in the UK and its earlier assumptions that it could adapt the software developed for the Macau Airport. As there were incompatibilities in size and scope, EDS had decided to write several of the software programmes from first principles. Mr OAKERVEE said that the programmes for essential functions should be available for integration before December 1997, and the rest for integration by airport opening. It would appear to the Select Committee that Mr OAKERVEE was trying to put the blame on EDS for the delay in the system development of FIDS since the award of contract in 1995.

4.75 On 17 April 1997, Mr TSUI reported to the AA Project Committee the outcome of his three-day visit to EDS's office in the UK. He highlighted that the minimum system would be available by the end of September 1997, adequate for trial operation. In response to questions from the Chairman and members[41], Mr TSUI said that:

(a) the programme was being closely monitored on a daily basis and with reports given on a weekly basis;

(b) as a result of intensive discussion in the past few weeks, the contractor then understood AA's requirements; and

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Source:

[40] *Notes of the 163rd ADSCOM Meeting, 12 April 1997.*

[41] *Notes of the 53rd Project Committee Meeting, 17 April 1997.*

(c) the software to arrive at Hong Kong would be a factory tested package.

4.76 At the same meeting, Mr OAKERVEE remarked that every deliverable would need to undergo FAT.

4.77 Notwithstanding his objection to defer functionalities on 3 April 1997, Mr HEED advised that the Airport Management Division had been in close dialogue with Mr TSUI and his project team. The deferred functionalities by EDS had been agreed with the Project Division and in the event that these functionalities could not be delivered on target, manual operation could be used.

4.78 At the AA Board Meeting on 24 April 1997, Chairman/AA asked when the FIDS would be available. Mr Alistair THOMSON, Head of Construction of AA, said that the system would be provided in a number of components. By February 1998, all the necessary components would have been delivered to AA. The other non-essential items would be completed by mid-April 1998. Chairman/AA expressed concern that the delivery dates were too close to airport opening. Mr OAKERVEE said that by 30 September 1997, the components of the basis system would be available and that by 7 February 1998, the system should have been integrated. Chairman/AA said he hoped that the Project Division could pay special attention to FIDS to ensure that the target dates would be met.[42]

4.79 At the meeting, Mr WONG Hung-kin, Project Manager of NAPCO (PM/NAPCO), pointed out that while AA Management was closely monitoring the progress of FIDS, NAPCO, in performing its monitoring role, would need some documentation for reference. He suggested that written reports should be given to NAPCO after AA's weekly meetings with the contractor. Mr OAKERVEE responded that AA Management would accommodate NAPCO's request as far as possible but on this fast moving matter, it would be better not to use written reports to disseminate information. He added that the notes of the relevant weekly meetings might be a useful reference.

Source:

[42] *Minutes of the 23rd AA Board Meeting, 24 April 1997.*

4.80 At the ADSCOM Meeting on 10 May 1997, CEO/AA reassured Chairman/ADSCOM that the revised FIDS programme was achievable.[43]

Further revisions of the FIDS programme (June to December 1997)

4.81 On 17 June 1997, a presentation of the FIDS programme with revised target delivery dates of the software builds was made by EDS's representative at the AA Board Workshop. Unconvinced by assurance, perhaps unsurprisingly, of timely delivery of an integrated system for adequate testing, DCA asked in case the system integration in January/February 1998 failed, whether FIDS could be reverted to the 3 standalone systems – Build 1.3 (Flight Display), Build 1.4 (CUTE) and Build 1.5 (Allocation System). Mr REECE, EDS's representative, replied that the 3 standalone systems were always there as a fall back.[44]

4.82 At a further presentation by GEC and EDS on 16 September 1997 to the AA Board on the progress of FIDS, Build 2.0 was to be delivered by 4 December 1997, a deferral of more than one month from the target date set in April 1997. However, Mr OAKERVEE continued to stress confidence in EDS's ability to deliver the remaining Builds, and said that slippages since June 1997 had been arrested in August 1997 even with minor gains in some areas.

4.83 The possibility of slippages having an adverse impact on training was realized. Some Board members and staff of the Airport Management Division attending the meeting showed concern. Mr Billy LAM suggested that the contractor work out a detailed training plan.

4.84 S for W asked whether the delivery date for Build 2.1, the final system, could be brought forward so that it would be available before the target airport opening date. He also hoped that Build 2.1 was being developed with a good monitoring programme to ensure no surprises, otherwise it would be too late to rectify. Mr PFLAEGER, EDS's representative, advised that every endeavour would be made to bring the date forward.

Source:

[43] *Notes of the 164th ADSCOM Meeting, 10 May 1997, paragraph 6.*

[44] *Notes of the AA Board Workshop on Progress Review for C381 – FIDS, 17 June 1997.*

4.85 At the request of Chairman/ADSCOM, AA Management presented its assessments of AOR to ADSCOM on 20 September and 13 October 1997 respectively. In the paper presented on 20 September 1997, it was stated that the AOD version of FIDS (Build 2.0) was due by the first week of December 1997 and the target was to have it installed and commissioned by the end of December 1997. The fully integrated version would be available by second airport trial in February 1998.[45] In the paper presented on 13 October 1997, it was stated that integration of systems would commence in October 1997 with the integration of BHS with FIDS and CUTE. This gave the AA confidence that the integration essential for efficient airport operation would be completed by the end of January 1998, giving adequate time for further training on the integrated system.[46]

4.86 Yet, at the Special ADSCOM Meeting on 7 November 1997, DCA said that Build 1.5 failed to arrive on 3 November as scheduled, and the AA Management could not provide a date on which it would arrive. DCA was worried about systems integration within FIDS and about its integration with other airport systems.[47]

4.87 In November 1997, GEC proposed to AA to wrap up all claims and variations to C381 in the sum of around HK$161 million. Mr TSUI King-cheong started to review both the original PTS and the SSS as submitted by GEC in November 1996. It was established that the PTS was ambiguous and lacking in clarity on the scope of functions required to be provided by the system. The findings also revealed that the majority of the contractor's design proposals made at the end of 1995 were in accordance with the PTS, albeit at variance with what AA actually wanted at that time for FIDS. The FIDS contract was awarded in August 1995. More than a year later in November 1996, there was much confusion regarding PTS and user functions which led to claims and delays. The Select Committee cannot accept this.

Source:

[45] *"Airport Operational Readiness: Assessment of Readiness to Achieve Airport Opening on Schedule in April 1998", ADSCOM Paper 33/97 for the meeting on 20 September 1997, Annex A, paragraphs 17 and 18.*

[46] *"Airport Operational Readiness: Assessment of Ability to Open the Airport in April 1998", ADSCOM Paper 36/97 for the meeting on 13 October 1997, paragraph 14.*

[47] *Notes of the Special ADSCOM Meeting, 7 November 1997, paragraph 3.*

4.88 In respect of the validity of the claims, Mr TSUI found that the majority raised by the contractor were in fact legitimate, due to the ambiguity of the PTS. The combined effect of such variations (some 270 in total) had seriously delayed and disrupted the progress of works because of the need in the total rewriting of the system software. The review concluded that the contractor was entitled to be reimbursed for the disruption and prolongation costs incurred.[48]

4.89 From November to December 1997, Mr TSUI entered into a series of meetings with GEC in an attempt to resolve its claims. PM(E & M Works)/AA finally assessed the total value of claims and variations to be in the sum of HK$89.78 million. GEC agreed to accept this sum as full and final settlement of all claims or agreed variations known to GEC or his subcontractors which had occurred or commenced on or before 10 December 1997.[49]

4.90 From December 1997, Mr Paul EVANS, Construction Engineer of AA, held daily site meetings with GEC and EDS project staff to discuss progress and how problems encountered could be resolved. Representatives from AA's Information Technology (IT) Department also took part in the daily site meetings and the tests conducted at AA's Interface House.[50]

4.91 The above slippages culminated in a new agreement signed by Mr TSUI for AA with GEC on 5 December 1997. A feature of this agreement was that the FAT would be carried out together with SAT from 19 January 1998.[51] ***On the evidence, the Select Committee has no hesitation finding that this was just a euphemism for cancelling FAT, a vital series of tests.*** It was also stated in the agreement that the break up of Build 2.0 into Build 1.3, Build 1.4 and Build 1.5 would require 5 days for break up and 5 days for testing.[52]

Source:

[48] *Project Committee Paper 10/98 for the meeting on 12 January 1998, paragraphs 6 and 7.*

[49] *Project Committee Paper 10/98 for the meeting on 12 January 1998, paragraph 9.*

[50] *Witness Statement of Mr TSUI King-cheong to the Commission of Inquiry on the New Airport, 11 September 1998, paragraphs 31 and 32.*

[51] *Witness Statement of Mr TSUI King-cheong to the Commission of Inquiry on the New Airport, 11 September 1998, paragraph 33.*

[52] *AA/GEC Agreement, 5 December 1997.*

4.92 ***The Select Committee is surprised that Mr TSUI agreed to this arrangement, as the cancellation of FAT represents a serious compromise of the quality assurance process***. As pointed out earlier, in April 1997, Mr TSUI considered it unacceptable to have FAT and SAT run concurrently (paragraph 4.65 above). He had also informed the AA Project Committee on 17 April 1997 that the software to be delivered in Hong Kong would be a factory tested package (paragraph 4.75(c) above).

4.93 The Select Committee also notes that EDS, CSE and the Airport Management Division did not find the cancellation of FAT acceptable.

4.94 In the CSE's Monthly Report for December 1997, it was stated that AA had instructed its contractor to concentrate its resources on getting Build 2.0 operational in PTB. As a result, the FAT which was due to start at EDS in the UK on 19 December 1997 was cancelled. CSE considered that this change in priority would have an adverse effect on the testing and proving of the system and be detrimental to the overall progress.[53] Subsequently, CSE further pointed out that the lack of a formal FAT meant that AA had given up the opportunity to trap faults before delivery. This omission had resulted in a large number of problems caused to the commissioning process.[54]

4.95 Ms Vivian CHEUNG also pointed out that as FAT was a step-by-step functional test against the PTS, the cancellation of FAT would mean that AA had no way to ascertain whether all the specified functions were delivered.[55]

Source:

[53] *CSE's Monthly Report, December 1997, item 6.7.1.*

[54] *CSE's "FIDS Status Review", 10 February 1998.*

[55] *Memo dated 26 February 1998 from Ms Vivian CHEUNG, M(TS)/Airport Management Division/AA, to Mr TSUI King-cheong, PM(E & M Works)/AA.*

4.96 At the public hearing of the Select Committee on 16 November 1998, Mr TSUI explained that because of pressing time, FAT was not conducted. However, he considered that if he had not made that decision, he would not have known when the software builds could be delivered to the site for testing and what standard the software was up to.[56] The Select Committee does not accept this explanation in that it indicated that he was prepared to sacrifice standard and quality in order to meet an April opening date.

4.97 At the AA Board Meeting on 9 December 1997, Mr TSUI said that the Project Team had made a conscious decision on combining FAT and SAT which would save time in the setting up of the system.[57] However, there was no indication from the minutes of the meeting that Mr TSUI had highlighted the effect of the combination of the two tests. There is, therefore, no doubt that the Board was aware of the move, even if not fully aware of its significance.

4.98 The Select Committee considers it misleading for Mr TSUI to have informed the AA Board that FAT would be combined with SAT. The Select Committee notes that under the PTS, the contractor should conduct FAT and SAT. In the PTS, "Factory Tests" is defined as "tests carried out on items of Plant at the manufacturer's works or elsewhere before they are dispatched to site". In other words, the so called "combined FAT/SAT" conducted on site could not be regarded as FAT. At the public hearing of the Select Committee on 16 November 1998, Mr TSUI admitted that no FAT had been conducted in the UK.[58] The undeniable fact is: FAT had been cancelled.

4.99 The Select Committee also notes that in the reply dated 10 December 1997 from Chairman/AA to Chairman/ADSCOM, there is an attachment entitled "Issues Critical to the Opening of the New Airport – Supplementary Questions Raised by Government Members of the Board". In page 4 of the attachment, it is stated "the 10 outstanding "bugs" out of 560 (of FIDS (Build 2.0)) will be cleared and the software will go through FAT in the UK." This statement is factually incorrect because no FAT had been/would be conducted in the UK.

Source:

[56] *Minutes of evidence of the 16th public hearing of the Select Committee, 16 November 1998, page 59.*

[57] *Minutes of the 34th AA Board Meeting, 9 December 1997, paragraph 1.8.*

[58] *Minutes of evidence of the 16th public hearing of the Select Committee, 16 November 1998, pages 45 and 50.*

The Select Committee wonders why such inaccurate information had been presented to ADSCOM on the subject of issues critical to the opening of the new airport. It is fortunate that Chairman/ADSCOM had not relied on the assessments by AA and had finally decided to defer the April opening date.

System development, tests and trials (January to July 1998)

4.100 The likely functional readiness of FIDS for an April opening date was assessed at the Special ADSCOM Meeting on 2 January 1998. S for W reported that the WB review team believed that FIDS requirements for the first airport trial scheduled for 18 January could be met. SES said that there was no guarantee at this point of time that FIDS would work. He was given to understand that even the standalone version (Build 1.5) had not been tested. S for W said that AA's plan was to test Build 1.5 together with Build 2.0 on an integrated basis with the standalone version as a fall back. As AA had greater confidence in getting Build 2.0 to work, Build 1.5 was not being tested on a standalone basis.[59]

4.101 At the AA Project Committee Meeting on 12 January 1998, members discussed the AA Management's proposal to settle the claims and variations by GEC in the sum of HK$89.78 million. A Board member wondered if the settlement was reasonable. Mr Douglas OAKERVEE said that the contractor was duly entitled to the variation cost, as it was not foreseeable that the software had to be written from scratch. The Project Committee finally endorsed the use of the Phase 1a Project Contingency to fund the agreed claims and settlement for C381.[60]

4.102 At the AA AOR Steering Committee Meeting on 15 January 1998, DCA expressed grave concern about the integration of FIDS. He felt that because the level of sophistication in the FIDS design far exceeded the operating requirements, this had inappropriately hindered the integration work of the principal functions. He urged that a decision be made as soon as possible on

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Source:

[59] *Notes of the Special ADSCOM Meeting, 2 January 1998, paragraphs 1, 8 and 9.*

[60] *Notes of the 65th Project Committee Meeting, 12 January 1998, paragraphs 6.04, 6.06 and 6.08.*

identifying the principal functions which were required for Day One operation so that these could be completed as a matter of priority. Mr JESUDASON, the then Divisional Manager (Planning & Scheduling) of the Project Division, said that the target for the full integration of FIDS remained to be 15 February 1998. DCA reiterated that if full integration could not be achieved by that time, then the said decision would have to be made.[61]

4.103 It is indisputable that FIDS Build 2.0 in a form suitable for testing was finally delivered only on 15 January 1998, without having gone through FAT. On 18 January 1998, during the First Trial, FIDS crashed. Overseas experts had to be flown in as the local contractor did not have the expertise to resolve the problem.[62] The second to fifth trials were then held on the following dates:

Second Trial	15 February 1998
Third Trial	28 March 1998
Fourth Trial	2 May 1998
Fifth Trial	14 June 1998

4.104 At the AA Board Meeting on 22 January 1998, Mr Chern HEED, AMD/AA, reported that the stability of FIDS needed "some improvement". Mr Douglas OAKERVEE said that the problems relating to FIDS were "not major".[63]

4.105 On 10 February 1998, Mr Alan LAM, General Manager (Airfield Operations) of the Airport Management Division of AA, informed Mr Chern HEED in writing that integration of TMS with FIDS had slipped some three months. Build 2.0 installed in the PTB was still not functional on 6 February 1998. The system crashed ten minutes after start up and could not be restarted. In response to Airport Management Division's queries in the past three months, EDS had given conflicting advice. Initially, EDS said that TMS could operate in a standalone mode should problems occur in FIDS integration. In December

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Source:

61 *Minutes of the 12th AA AOR Steering Committee Meeting, 15 January 1998, paragraph 2.2.*

62 *Notes of the ADSCOM Meeting, 14 February 1998, paragraphs 2 and 9.*

63 *Minutes of the 37th AA Board Meeting, 22 January 1998, paragraphs 2.2.2 and 2.2.4.*

1997, however, in response to the query on fall back arrangement, it was revealed that the TMS standalone mode was no longer available.[64]

4.106 Mr Kiron CHATTERJEE, HIT/AA, also advised Mr Billy LAM on 10 February 1998 that to "unstitch" Build 2.0 into component working modules would take longer than to stabilise Build 2.0.[65] This meant that standalone systems would not be a viable option as fallback for the failure of the main FIDS on AOD.

4.107 At the ADSCOM Meeting on 14 February 1998, Chairman and members expressed the following views on FIDS during internal discussion, before being joined by the AA Management[66]:

(a) Chairman/ADSCOM felt that the Government was not getting accurate information for FIDS. She also felt that AA might be too ambitious in choosing a very sophisticated system;

(b) FS asked whether the integrated FIDS was a novelty or was being used elsewhere. S for W replied that the system was not new but others had not tried that level of sophistication in their systems. The hardware was from US and UK and the software was developed by EDS;

(c) CPM/NAPCO said that NAPCO staff had been kept out of detailed information on FIDS;

(d) S for W considered it essential to have sufficient time for SAT;

(e) SES added that AA must have standalone components as a fallback; manual working in the event of a system breakdown would be unacceptable.

Source:

64 *Memo dated 10 February 1998 from Mr Alan LAM to Mr Chern HEED, items 3 and 4.*

65 *Letter dated 10 February 1998 from Mr Kiron CHATTERJEE, HIT/AA, to Mr Billy LAM, the then DCEO/AA, page 2.*

66 *Notes of the ADSCOM Meeting, 14 February 1998.*

4.108 At the later part of the meeting, Mr Douglas OAKERVEE reported that FIDS continued to be the most critical area of concern and that progress had fallen behind programme. While the problems of FIDS were discussed at some length, he also said that the problems encountered at the First Trial had been identified and solved. Dr Henry TOWNSEND, CEO/AA, reassured Chairman/ADSCOM that if full integration of FIDS was not possible on AOD, there was technically the possibility of running each function of FIDS in standalone mode which would require extra monitors, workstations and control panels, but was not a re-designing of the system. It would take about 2 to 3 weeks to unravel the FIDS integrated software mode.

4.109 The Select Committee finds it strange that CEO/AA could give this assurance. The evidence available to the Select Committee clearly indicates that, at the very least, whether reverting to the standalone mode was feasible or practicable has become questionable at this stage.

4.110 Mr Chern HEED, AMD/AA, pointed out at the same ADSCOM Meeting that systems in standalone mode were more complicated to operate. However, he confirmed the training of staff for operating the standalone/partially integrated systems would be concluded by the end of May 1998.

4.111 DCA suggested AA to look for something straight off-the-shelf in place of FIDS if the latter proved to be problematic. Dr TOWNSEND did not consider that necessary.

4.112 On 15 February 1998, FIDS crashed again during the Second Trial. The check-in LCD summary board was unserviceable and CUTE/FIDS interface only partially functional.[67]

4.113 At the AA Board Meeting on 26 February 1998, Dr Brian FINNIE, AA's consultant on software, advised that AA should ensure that appropriate and adequate staff resources would be deployed for SAT. He pointed out that any

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Source:

[67] *"PTB Trials-Comments of Participants", Annex A to AA Board Paper 65/98 for the meeting on 26 February 1998, page 6.*

delay to SAT, which defined the baseline requirements, would cause delay to other tests, and might cause risks.[68]

4.114 DCA again expressed grave concern about the development of FIDS and asked if the AA Management could guarantee that the system would be operational on 6 July 1998. He urged to proceed with a fallback plan. Dr Henry TOWNSEND said that the Management would make a decision upon the completion of SAT by 19 March 1998.

4.115 However, DCA's views were supported by Dr Brian FINNIE, Miss Maria TAM, Dr Peter WONG, S for Tsy and S for W. The Board finally agreed to set up a standby facility for FIDS. At that point, there were only four months left before AOD for a contractor to design and deliver a standby system.

4.116 After the cancellation of FAT, a Pre-SAT was conducted by EDS at its office at Hook from 29 January to 26 February 1998. The tight test schedule of FIDS is in **Table 4.2**.

4.117 In his reply dated 28 February 1998 to Ms Vivian CHEUNG, Mr TSUI King-cheong stated that the "Pre-SAT in Hook is in effect FAT and it has been completed in a well controlled factory environment." However, Ms Rita LEE, Project Manager of the IT Department of AA, who witnessed the Pre-SAT, pointed out that owing to the limitation of the host server set up and network configuration at Hook, tests like host server failover, display server failover and stress test were not included in the Pre-SAT. Other tests like volume test, etc. were not covered.[69] At the public hearing of the Select Committee on 16 November 1998, Mr TSUI admitted that Pre-SAT could not replace FAT and for this case, the Pre-SAT had not achieved the same level of testing of FAT.[70]

Source:

[68] *Minutes of the 38th AA Board Meeting, 26 February 1998, paragraphs 2.2.5 and 2.2.17.*

[69] *E-mail dated 26 February 1998 from Ms Rita LEE, PM/IT/AA, to Ms Yvonne MA, PM/IT/AA.*

[70] *Minutes of evidence of the 16th public hearing of the Select Committee, 16 November 1998, pages 50 and 52.*

	Status Report On C381 as at 6/4/97	**Actual dates of the Tests (Letter dated 24 December 1998 from Mr Billy LAM, CEO/AA to Clerk to the Select Committee)**
Installation	7/11/97	-
FAT	13/11/97	-
Pre-SAT	-	29/1/98 to 26/2/98
FAT/SAT	-	23/2/98 to 19/3/98
SAT	24/11/97	23/2/98 to 19/3/98
Re-SAT	-	1/4/98 to 8/4/98
Systems Integration	9/1/98	-
Systems Integration (Deferred Items)	19/3/98	-
FIDS/CUTE Interface Test	-	21/3/98 (Initial Test) 5/5/98 to 6/5/98 (Phase 1) 8/5/98 to 12/5/98 (Phase 2) 14/5/98 (Phase 3) 19/5/98 to 21/5/98 (Phase 4) 28/5/98 (Phase 5)
Final Regression Test	-	18/5/98 to 29/5/98
Failover Test	-	31/5/98 (Initial) 1/7/98 (Outstanding)
Resilience Test	-	31/5/98 (Initial) 1/7/98 (Outstanding)
Response Test	-	30/5/98
Multi-system Integration Test	-	6/6/98 to 27/6/98
Reliability Test	-	6/6/98 to 27/6/98

Table 4.2 Test Schedule of FIDS

4.118 From 23 February to 19 March 1998, the so-called "FAT/SAT" combined tests were carried out. According to the "FIDS Site Acceptance Test Report – 23 February 1998 to 19 March 1998" prepared by Ms Rita LEE, the system was found very unstable, and the host server and the display went down very easily. Ms LEE also pointed out that the number of minor errors was alarming. She recommended that a problem fixing programme must be worked out for tracking the problem report (PR) fixing to ensure that the major functionality of the system work and to allow sufficient time for the Airport Management Division to be familiar with the system well before airport opening.[71]

4.119 Moreover, in the CSE's Monthly Report for March 1998, in terms of the total number of test scripts run, 83% of SATs were completed without any step failing. This figure included a large number of TMS basic functionality tests which were very low level test. CSE considered it reasonable to expect that the TMS should pass these steps without problems. If these tests were not counted, then the figure was 14%. CSE also pointed out that before testing commenced, the system was not in a stable enough state to allow final acceptance to be recommended.[72]

4.120 According to Ms Vivian CHEUNG, Manager – Terminal Systems of the Airport Management Division of AA, a lot of the very basic problems which could have been identified easily in FAT were present in SAT.[73]

4.121 At the ADSCOM Meeting on 21 March 1998, CPM/NAPCO said that AA had only tested the functionality of FIDS on site on a selected few monitors with a 90% success rate. S for W pointed out that AA always had a standby system, i.e. the standalone systems. The fully tested standalone systems would be available by July 1998.[74] ***This shows that since the standalone system was no longer an option in February 1998, S for W was***

Source:

[71] *"FIDS Site Acceptance Test Report – 23 February 1998 to 19 March 1998", Ms Rita LEE, PM/IT/AA, 27 March 1998, pages 2 and 3.*

[72] *CSE's Monthly Report for March 1998, item 6.7.1.*

[73] *Minutes of evidence of the 19th public hearing of the Select Committee, 19 November 1998, pages 122 and 123.*

[74] *Notes of the ADSCOM Meeting, 21 March 1998, paragraphs 5 and 6.*

either misleading ADSCOM or plainly had not grasped the basic facts about FIDS.

4.122 DCA said at the same meeting that he believed the specifications of FIDS/CUTE integration were warped. In his view, AA had aimed for something that was too sophisticated and they did not have enough time to carry it through. He had been pressing strongly for a standalone system since June 1997. But AA Management had been reluctant to do that. The Select Committee finds that, in fact, it had become plain to the AA Management at this stage that the standalone mode was no longer an option.

4.123 Notwithstanding the results of SAT as stated in the two reports mentioned at paragraphs 4.118 and 4.119 above, Mr TSUI King-cheong, PM(E & M Works)/AA, reported to the AA Board at its meeting on 23 March 1998 that Build 2.0 of FIDS was used in SAT and throughout the test, the system remained stable. Dr Henry TOWNSEND said that the outcome of SAT was encouraging and would be reported to ADSCOM at its following meeting.[75]

4.124 DCA was pleased to learn the progress of FIDS. However, he urged AA to proceed with the development of a standby system as it would be critical to airport operation. Mr Leo KWAN, the then Acting SES, echoed his views.

4.125 Mr Kiron CHATTERJEE, HIT/AA, then briefed the Board members on the proposed Standby FIDS. He said that the proposal was to develop a simple system which would serve the needs of the Airport Management Division. Mr KWOK Ka-keung, D/NAPCO, asked whether the target completion date of the Standby FIDS could be advanced from the end of June 1998 to allow time for staff training. Mr CHATTERJEE responded that he was unable to give any confirmation.[76]

Source:

[75] *Minutes of the 39th AA Board Meeting, 23 March 1998, paragraphs 3.9.1 and 3.9.2.*

[76] *Minutes of the 39th AA Board Meeting, 23 March 1998, paragraphs 3.9.4 and 3.9.5.*

4.126 During the Third Trial on 28 March 1998, integration problem between FIDS and BHS were outstanding. Reclaim LCDs were all out because the display server was down. There were also problems with gate allocation and check-in desk allocation. Many airlines could not close the check-in counter and gate.[77]

4.127 At the ADSCOM Meeting on 1 April 1998, CPM/NAPCO said that application of FIDS during the Third Trial was a restricted one. He was concerned about the back-up manual data transfer arrangements between FIDS and the related systems. AA's report provided just a narrative of these arrangements without quantification of various ensuing requirements of additional equipment, software modification, procedural modification, staff and training needs. Actual details on the programme for these elements were required before an assessment of feasibility could be made.[78] In this connection, the Select Committee notes that NAPCO stated in its Weekly Situation Report issued on 1 April 1998 that "The airport systems have yet to achieve a state of pre-operational functionality, and this represents the greatest risk to the AOR programme."[79]

4.128 The Select Committee notes that the "AA's report" referred by CPM/NAPCO should be the "FIDS Status Report as at 1 April 1998" prepared by AA for that ADSCOM Meeting. The report contained inaccurate information. First, it was stated in the report that as proved by AA's Third Trial held on 28 March 1998, the FIDS had been developed sufficiently to provide an operational system which could satisfactorily be operated by both the staff of the Airport Management Division and the airlines. As the Select Committee finds, this was neither an accurate nor full picture. From the evidence, a large number of problems were actually reported by the staff running the trial (paragraph 4.126 above).

Source:

77 *"Comment and Check List on the Facilities and Systems from the Third Operation Trial", 28 March 1998.*

78 *Notes of the 180th ADSCOM Meeting, 1 April 1998, paragraph 2.*

79 *NAPCO's Weekly Situation Report, 1 April 1998.*

4.129 Secondly, it was stated in the AA's report that approximately 90% of the 2,146 planned FAT/SAT tests were successfully conducted and a further 525 PRs were raised and referred to EDS's office in the UK. The contractor was fixing about 60 PRs per week.[80] This presented a picture far from what had been stated in the two reports prepared respectively by CSE and Ms Rita LEE (paragraphs 4.118 and 4.119 above).

4.130 At the same ADSCOM Meeting, Mr Douglas OAKERVEE highlighted that AA was pleased with the results of the Third Trial on 28 March 1998. FIDS was stable during the trial, and the Airport Management Division and the airlines could operate on the system.[81]

4.131 Mr Kiron CHATTERJEE gave a presentation on the Standby FIDS at the meeting. Chairman/ADSCOM encouraged AA to work hard on the standby system and ensure that it would be available in time for airport opening. Regardless of the results of the tests on FIDS, there had to be a standby available on Day One. DCA pushed AA to advance milestone for the Standby FIDS from 15 May to 1 May 1998.[82]

4.132 A Repeat Site Acceptance Test (Re-SAT) for FIDS was conducted from 1 April to 8 April 1998 to demonstrate that a number of observations raised at the SAT had been fixed. According to the CSE's Monthly Report for April 1998, 61 observations from the SAT were demonstrated as fixed and 59 new observations were raised. CSE considered that it had not yet been able to demonstrate that the system had achieved a level of performance appropriate to an acceptance test.[83]

Source:

80 *"FIDS Status Report as at 1 April 1998", ADSCOM Paper 16/98 for the meeting on 1 April 1998, paragraphs 3 and 5.*

81 *Notes of the 180th ADSCOM Meeting, 1 April 1998, paragraph 8.*

82 *Notes of the 180th ADSCOM Meeting, 1 April 1998, paragraphs 16 and 20.*

83 *CSE's Monthly Report, April 1998, item 6.7.1.*

4.133 At the ADSCOM Meeting on 18 April 1998, Mr Kiron CHATTERJEE confirmed that every single functionality of BHS, CUTE and FIDS would be available in the integrated mode by 2 May 1998. He also confirmed that the Standby FIDS would be available and operational by 15 June 1998.[84]

4.134 The Fourth Trial took place on 2 May 1998. Many LCD displays at gates malfunctioned. LCD summary board for Baggage Reclaim displayed wrong information. FIDS lateral assignment displayed at Level 2 of PTB was found to have lots of missing information. Same as in the Third Trial, many airlines could not close check-in counter and gate.[85]

4.135 According to the Weekly NAPCO Situation Reports issued on 1 and 8 May 1998, AA claimed to have corrected many of the FIDS critical software issues. However, a number of software issues, which the Airport Management Division stated as critical, were still outstanding. This continued to raise concerns on AA's ability to establish Day One operating scenario. FIDS crashed again during the systems trial on 29 April 1998 giving cause for the concern. NAPCO had not received the AA's quantification of additional data transfer requirements as promised.

4.136 During the internal discussions at the ADSCOM Meeting on 22 May 1998, CPM/NAPCO considered the actual operational readiness of the new airport an area of concern. He pointed out that the plan had been for the systems to be available by early May so as to allow for a full two-month training and familiarization. However, lots of integration were still underway and programmed for completion by end of May. He advised that depending on the integration of the systems, the actual operation on 6 July 1998 could be a lot less tidy than envisaged. D/NAPCO believed that although there could be occasional hiccups, the airport would be reasonably safe and the problems might not be obvious to the passengers. Chairman/ADSCOM believed it imperative to ensure that AA did not slacken their pace.[86]

Source:

[84] *Notes of the 181st ADSCOM Meeting, 18 April 1998, paragraphs 49 and 58.*

[85] *"Comment and Check List on the Facilities and Systems from the Fourth Operations Trials", 2 May 1998.*

[86] *Notes of the 183rd ADSCOM Meeting, 22 May 1998, paragraphs 5, 6 and 7.*

4.137 At the NAPCO Directorate Meeting on 25 May 1998, CPM/NAPCO said that progress on site indicated that systems integration remained a risk for airport opening. Quantification of additional data transfer requirements under the contingency scenario was still outstanding from AA.[87]

4.138 At the AA Board Meeting on 28 May 1998, Mr Kiron CHATTERJEE, HIT/AA, reported that notwithstanding the delay in signing the contract, development for the Standby FIDS had been progressing satisfactorily.[88]

4.139 On 6 June 1998, Ms Vivian CHEUNG forwarded to Mr TSUI King-cheong, copied to Mr Kiron CHATTERJEE and others, a list of 38 FIDS major outstanding PRs and issues which affected operations. It was later found that of these 38 items, the following three caused problems on AOD:

(a) Item 1 of the list

Very slow response time with stands/desk allocation;

(b) Item 7 of the list

Display monitors not receiving update flight information due to display server problems; and

(c) Item 9 of the list

Flights are displayed in incorrect sequence and with incorrect information.[89]

4.140 On 8 June 1998, Mr NG Ki-sing, General Manager (Terminal Operations) of the Airport Management Division of AA, wrote to Mr TSUI King-cheong urging his personal attention to the FIDS major outstanding problem reports and issues stated in Ms Vivian CHEUNG's letter dated 6 June

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Source:

87 *Notes of NAPCO Directorate Meeting, 25 May 1998, paragraph 1(b).*

88 *Minutes of the 42nd AA Board Meeting, 28 May 1998, paragraph 3.3.1.*

89 *Memo dated 6 June 1998 from Ms Vivian CHEUNG, M(TS)/Airport Management Division/AA, to Mr TSUI King-cheong, PM(E & M Works)/AA.*

1998. Mr NG pointed out that while the Airport Management Division might have to accept workarounds if the contractor could not fix the problems in time, neither it nor the IT Department would have sufficient resources to operate the FIDS with so many workarounds. Mr NG considered that the objective should be not to rely on the workarounds, which had yet been identified.

4.141 Representatives from the Airport Management Division, IT Department and EDS met on 9 June 1998 and 17 June 1998 and went through the list of 38 outstanding items. Representatives of the Project Division joined only the first meeting. It was agreed at the second meeting that there were no outstanding showstopper items preventing AA from using FIDS from AOD.[90]

4.142 During the Fifth Trial conducted on 14 June 1998, there was the problem of very slow response time at the FIDS operators' workstations. For one of the workstations, the system had to be rebooted. Moreover, flight information in most displays was not shown in time order. Information about cancelled flights was still on the gate LCDs as the data on stand allocations were not removed from TMS automatically during cancellation.[91] According to Mr NG Ki-sing, GM(TO)/AMD/AA, these problems were still outstanding on 5 July 1998, one day before AOD.[92]

4.143 At the NAPCO Directorate Meeting on 22 June 1998, D/NAPCO said that the major concerns with the systems integration were the instability of FIDS and the standby system not being fully tested. Chief Coordinator (Chek Lap Kok) reported that the time gap for switching to the permanent FIDS would likely take longer than 45 minutes.[93]

Source:

[90] *Memo dated 18 June 1998 from Mr Kiron CHATTERJEE, HIT/AA, to Ms Vivian CHEUNG and EDS.*

[91] *"Comment and Check List on the Facilities and Systems" from the Fifth Airport Operations Trial, 14 June 1998.*

[92] *Letter dated 13 November 1998 from Mr NG Ki-sing, GM(TO)/AMD/AA, to Clerk to the Select Committee, Attachment 2.*

[93] *Notes of NAPCO Directorate Meeting, 22 June 1998, paragraph 1(b).*

4.144 At the AA Board Meeting on 25 June 1998, the Board noted the paper on "Airport Operational Readiness Progress as at 22 June 1998"[94]. It was stated in the paper that reliability testing of FIDS was completed on 20 June 1998 with 98.7% ***reliability***. Full reliability testing for the standby FIDS started on 21 June and would run through to 24 June.

4.145 Dr Henry TOWNSEND reported at the meeting that the Standby FIDS had been connected to the servers and tests had been conducted for 2 consecutive days that week with satisfactory results. A special test would be carried out on the switching from the main FIDS to Standby FIDS. CEO/AA said that the standby system had been operated by AMD staff and Management was confident that the system would be able to download the required information into FIDS successfully. After running the main FIDS for a week, the system was found to be operating satisfactorily at about 98.7% of the time which was perceived to be acceptable. The main FIDS and the Standby stand allocation system should be in operation on airport opening.[95] DCA commented that the present status of FIDS system should have been reached some 6 months ago.

4.146 On the stability of the main FIDS and the switch over time from the main FIDS to Standby FIDS, the Select Committee notes that various warning signs were reflected in the following reports of NAPCO:

(a) Update on New Airport Projects (as at 22 June 1998)

Overall FIDS remained unstable as revealed by problems in the Fifth Trial on 14 June 1998. The Standby FIDS was reported as being ready but the switch over time was estimated to be 45 minutes. This was very optimistic and only possible with large amount of staff resources to effect the switch over. The Standby FIDS was not a preferred option at airport opening.

Source:

94 *"AOR Progress as at 22 June 1998", AA Board Paper 183/98 for the meeting on 25 June 1998, paragraph 28.*

95 *Minutes of the 43rd AA Board Meeting minutes, 25 June 1998, paragraph 2.2.1.*

(b) "Chairman's Brief" for ADSCOM's visit to the new airport on 24 June 1998

NAPCO suspected that FIDS problems had not been fully resolved. The 98.7% ***reliability*** of the system was not satisfactory. The switching over from the main FIDS to the standby system had not been tested. The 45 minutes switch over time was only an estimate from AA.[96]

(c) Internal report by Mr Dave THOMPSON, Bechtel's engineer, to D/NAPCO (27 June 1998)

Testing of FIDS had not yet been completed. However, preliminary ***availability*** performance figures showed that during a period of 312 hours, the two FIDS servers were down for 40.6 and 16 hours respectively. This resulted in a system outage time of 28 hours. Given these figures and other indicators, it was likely that some operational outages of the FIDS system were to be expected.

(d) NAPCO's Weekly Situation Report (issued on 29 June 1998)

Outstanding number of FIDS software problem reports had been increasing, including the high priority items. Reliability tests continued but FIDS performance still showed instability problems.

(e) Update on New Airport Projects (as at 30 June 1998)

Overall FIDS remained unstable. During a 312 hours continuous test from 14 June to 27 June, the FIDS host server was down for 9% of the time. This translated to about 2 hours downtime in a 24-hour period. The Standby FIDS was

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Source:

[96] *"Chairman's Brief" for ADSCOM's visit to the new airport, 24 June 1998, paragraph 5.*

reported as being ready but the switch over time was estimated to be 45 minutes. This was very optimistic and only possible with large amount of staff resources to effect the switch over.

(f) "Chairman's Brief" for the ADSCOM Meeting on 4 July 1998

According to NAPCO's information, FIDS was down for 9% of the time during the continuous test run between 14 June to 27 June 1998. NAPCO considered this not satisfactory. NAPCO also stated that AA would use workaround measures and try to re-run FIDS instead of switch over to the standby when the system failed in some manner, unless the system had been down for quite some time.

4.147 The Select Committee also notes that according to the System Stability Report of FIDS for the period from 12 June to 28 June 1998, FIDS was down for 27 hours, representing 11% of the total numbers of working hours during the period.

4.148 It is evident from the reports mentioned above that FIDS was unstable in June 1998. The Select Committee is therefore surprised to note that a different picture was presented to Chairman/AA and ADSCOM as follows:

(a) AA Weekly Status Report, Report No. 27 – Week ending 28 June 1998 presented to Chairman/AA

It was stated that ***reliability*** of the FIDS passenger system had exceeded 95% and was considered by AA Management as sufficient for AOD use.

(b) AOR Status Report (as at 30 June 1998) prepared by AA for the ADSCOM Meeting on 4 July 1998

Recent trial and reliability tests have confirmed that the main FIDS could be used and was sufficiently stable and that, when some displays or functions failed, available workarounds could be depended upon. A final switch over and trial of the

> Standby FIDS was conducted on 30 June 1998 with the cooperation of 35 airlines. The system was run for half a day. The trial was completed satisfactorily. With fine tuning, the overall switchover process including all communications rooms would take 30 minutes.

4.149 At the ADSCOM Meeting on 4 July 1998, members noted that switch over from the main FIDS to Standby FIDS was tested on 2 July with the assistance of 35 airlines. Within 30 minutes, most displays were switched on. Mr Kiron CHATTERJEE confirmed that that was acceptable from the operational point of view. However, ADSCOM did not seem to be aware of the fact that according to the Standby FIDS Operation Procedure, the switch over from the main FIDS to Standby FIDS would only be considered after it had been determined that the main FIDS would be down for more than 3 hours.

4.150 Mr Kiron CHATTERJEE also reported that the permanent FIDS continued to be stable. There would be workarounds when a function of the system went down, and the workarounds had been tested and found to work well. White boards and extra hands would be available to help with directing the passengers in the problem area.[97]

4.151 The Select Committee finds that, from the progress of the FIDS project, a number of problems had been building up along the process. In the Select Committee's view, most of the problems of FIDS on AOD were not new. This was also the view expressed by witnesses who followed the actual testing and operation of FIDS most closely on a day to day basis. To these witnesses, the only surprise was that the extent of the problems were more serious than even they had anticipated. With the main FIDS being unstable, and the Standby FIDS and the standalone systems not viable contingency measures, the chaotic situation on AOD was in fact an accident waiting to happen.

Source:

[97] *Notes of the ADSCOM Meeting, 4 July 1998, paragraphs 5 and 7.*

C. Hong Kong Air Cargo Terminals Limited (HACTL)

Problems on AOD

4.152 On 6 July 1998, breakdown of the crucial electrical and mechanical systems led to a complete collapse of functionality at ST1 and a large backlog of imports and exports cargo. Hundreds of trucks queued for up to 12 hours outside ST1 waiting to pick up and deliver goods. The supply of electricity at HACTL was reported to be unstable and there was a breakdown of weighing machines and the computer system. In the confusion, cargo could not be located. The operations were further slowed down by ramp handling operators who were unfamiliar with the new airport.

4.153 On 7 July 1998, HACTL announced that the impact of high volume of United Loaded Devices (ULDs) moved from Kai Tak for entry into the Container Storage System at ST1 had resulted in inaccuracy in ULD inventory. This led to difficulties in ULD retrieval which in turn affected both outbound and inbound flight handling. Moreover, HACTL also claimed that they had encountered computer system difficulties.[98] On 9 July 1998, HACTL announced a moratorium on all cargo on all aircraft, except inward perishables and some other items, with effect from 23:59 hour on that day.[99] Subsequently, normal air cargo handling services could not resume until 24 August 1998.[100]

4.154 The community at large was shocked by the total breakdown of cargo services in ST1 on AOD. This gave rise to the question: Was HACTL ready for operation on 6 July 1998?

4.155 The Select Committee first examined the Franchise Agreement between AA and HACTL and the circumstances leading to the problems at ST1 on AOD.

Source:

98 *HACTL News "HACTL Adopts Temporary Operations Measures", 7 July 1998.*

99 *HACTL News "HACTL: Moratorium Placed On Imported And Exports Of Air Freight At Super Terminal 1 Until 19 July", 9 July 1998.*

100 *HACTL News "HACTL Announces Full Resumption Of All Cargo Handling Services", 13 August 1998.*

Franchise Agreement

4.156 There are two cargo terminal operators in the new airport, namely, HACTL and Asia Airfreight Terminal Company Limited. They used their own funds to build and operate the cargo terminal facilities at the new airport pursuant to their respective franchise agreements entered into with AA. They provide the cargo terminal services to carriers and in some cases directly to freight forwarders or shippers. AA is not a party to these transactions.[101]

4.157 In May 1995, PAA asked HACTL to consider the implications of airport opening on 1 April 1998 on HACTL's operations, and the contingency arrangements in case its air cargo facilities could not be fully operational upon airport opening. In response, HACTL advised PAA that the realistic construction period for ST1 should be one month mobilization, 37 months construction and one month airport trials.[102] PAA did not accept this. After consideration, HACTL confirmed on 23 June 1995 that it would be prepared to commit to a 30 June 1998 completion date for three quarters of ST1 with an available capacity of about 1.8 million tonnes.[103]

4.158 At its meeting on 24 June 1995, ADSCOM considered whether three years' time was a reasonable period to complete the air cargo facility. Mr Gordon SIU, the then SES, said that the hardware of the facility could be completed within three years, but since the software was one of the most complicated in the world, more time would be required for testing before commissioning. However, as HACTL had agreed to shorten the programme, he believed that if the Government pushed HACTL a little bit harder, there might still be room for further compression by a few months.[104]

Source:

[101] *"Providers of various services and relationships", Schedule IV to the letter dated 13 August 1998 from Dr Henry TOWNSEND.*

[102] *Witness Statement of Mr Peter JOHANSEN, former HACTL Chairman, to the Commission of Inquiry on the New Airport, page 4.*

[103] *Witness Statement of Mr Anthony CHARTER to the Commission of Inquiry on the New Airport, page 23.*

[104] *Revised notes of the 138th ADSCOM Meeting, 24 June 1995, paragraph 5.*

4.159 On 29 June 1995, Mr Peter JOHANSEN, the then Chairman of HACTL, informed Dr Henry TOWNSEND in writing that the HACTL Board did not believe that completion of the first phase of ST1 could be achieved by April 1998. HACTL also raised its concerns about the complexities associated with the computer interface; the problems associated with commissioning the facilities of a cargo terminal of the size of ST1, and the contractual construction period of 36 months being "tough" but achievable.[105]

4.160 HACTL also raised the possibility of operating with partial capacity at CLK and the immense difficulties associated with trucking from CLK to Kai Tak.

4.161 Notwithstanding such concerns, PAA, through the then Financial Secretary, Sir Hamish Macleod, notified HACTL on 16 August 1995 that PAA was firmly committed to opening the new airport in April 1998. Both the Government and PAA expected HACTL to improve on the time for construction with a view to achieving a facility capable of handling a limited capacity of cargo (1.2 million tonnes per annum) on airport opening.[106]

4.162 The Franchise Agreement between AA and HACTL containing the legal obligations of HACTL to build and operate ST1 was then initialled on 18 August and finally signed on 21 December 1995. Under Clause 9.1 of the Franchise Agreement, HACTL "shall execute the Works with due diligence and expedition and shall ensure that the Stage is achieved by Key Date." The Stage Description and the Key Date were defined in Annex B to Appendix 6 of the Franchise Agreement. In essence, HACTL was required to issue a Certificate of Operational Readiness to AA not later than 18 August 1998 certifying that HACTL could provide a facility capable of processing 5,000 tonnes of air cargo per day, which was equivalent to 75% operational capacity of ST1. The Select Committee finds it a strange arrangement that there is no other agreement in existence tying the date of commencement of cargo handling operations of ST1 with AOD.

Source:

[105] *Witness Statement of Mr Peter JOHANSEN to the Commission of Inquiry on the New Airport, page 6.*

[106] *Letter dated 16 August 1995 from Sir Hamish Macleod, the then Financial Secretary, to Mr Peter JOHANSEN, the then Chairman of HACTL, page 2.*

4.163 In spite of the commitment of the Government and AA to open the new airport in April 1998, HACTL insisted on a 36-month contractual construction period for ST1 but agreed in August 1996 to embark on a "best endeavours" programme of achieving 50% operational capacity by the target opening date of April 1998. The "best endeavours" programme was not formally put on contract.

Delay in the construction works of Super Terminal 1

4.164 Since June 1996, Gammon Construction Limited - Paul Y Construction Company Limited Joint Venture (GPY), the main building contractor of ST1, had been reported to be behind the construction schedule of ST1. The situation had deteriorated due to inclement weather and construction was reported to be 24 weeks behind schedule in March 1997. From August 1997 to January 1998, HACTL remained as a critical item in AA's AOR reports to ADSCOM.

4.165 Mr Anthony CHARTER, MD/HACTL, informed the Select Committee that Mrs Anson CHAN, CS and Chairman/ADSCOM, visited ST1 in August 1997. During the visit, he explained to her that he was concerned about the April opening and the fact that HACTL might only have 50 percent of the building being operational and that as far as he was concerned that would be barely enough and it was too much of a risk. Despite this warning, Mrs CHAN still maintained that she was aiming for an April 1998 AOD.[107]

4.166 At the ADSCOM meeting on 13 October 1997, Chairman/ADSCOM said that from her discussion with Mr Anthony CHARTER, her assessment was that HACTL would work in earnest to meet the airport opening date once it was announced. Consultant Project Manager of NAPCO added that CEO/AA had reported that HACTL recently instructed its Box Storage System contractor to accelerate as part of a commercial deal which would achieve the required throughput.[108]

Source:

[107] *Minutes of evidence of the 5th public hearing of the Select Committee on 29 September 1998, page 13.*

[108] *Notes of the 171st ADSCOM Meeting, 13 October 1997, paragraph 2.*

4.167 At the same ADSCOM meeting, Dr Henry TOWNSEND reported that he believed that HACTL should be able to achieve 50% of its designed capacity by the end of April 1998. Chances of HACTL being able to meet a 1 April 1998 opening date were highly at risk. In response to ADSCOM Chairman, Dr TOWNSEND stated that AA had a higher level of confidence in HACTL's ability to meet the 50% capacity by the end of April than HACTL itself, the latter's confidence being 50/50. Although HACTL had tried to lobby for a later airport opening date by saying that it would be able to achieve 75% of its designed capacity by June 1998 as against 50% by the end of April 1998, there was a strong commitment from HACTL and its parent company, Swire, to meet the cargo handling demand at airport opening.[109] The Select Committee is at a complete loss as to the basis of Dr TOWNSEND's optimism in the readiness of HACTL to commence operation in April 1998. The Select Committee also fails to understand why no member of ADSCOM queried such obvious disparity in assessment.

4.168 Between November 1997 and January 1998, there were six to seven weeks of overall delay in the construction of the main HACTL building and the installation of cargo handling systems. HACTL assessed the chance of being ready for operation at the end of April 1998 as less than 50/50.[110]

4.169 At the ADSCOM Meeting on 8 December 1997, SES reported that HACTL had only 10% confidence in their ability to achieve 50% of their designed capacity by late April 1998. In its report to ADSCOM, NAPCO also advised that HACTL's progress was a key concern and quick action was essential to ensure that the measures would be implemented in time for an April opening date. Mr Douglas OAKERVEE also advised ADSCOM that HACTL would have to decide on acceleration before Christmas if it were to be ready for operation by late April 1998.[111]

Source:

[109] *ADSCOM Paper 36/97, page 9 and Notes of the 171st ADSCOM Meeting, 13 October 1997, paragraph 22.*

[110] *NAPCO SITREPs from November 1997 to January 1998.*

[111] *Notes of Special ADSCOM Meeting, 8 December 1998.*

4.170 Despite the delays at that point in time, HACTL had yet to instruct its contractors to recover the delay. Mr Anthony CHARTER informed AA that without formal announcement on the airport opening date, it was difficult for HACTL to seek financial support from banks.

4.171 In his letter dated 19 December 1997 to Dr Henry TOWNSEND, Mr Anthony CHARTER explained that one of the difficulties HACTL faced in reaching an agreement with GPY with a view to achieving operational status by the end of April 1998 was that consequential additional costs might not be allowed as an addition to the construction cost under Schedule H of the Franchise Agreement between AA and HACTL. HACTL would not proceed to instruct GPY or reach further agreements with GPY to accelerate its works unless HACTL had AA's agreement to include the additional costs incurred in the construction cost of ST1.[112]

4.172 On 23 December 1997, Dr Henry TOWNSEND advised Mr Anthony CHARTER in response that AA had no objection to the principle of HACTL's proposed agreement with GPY and there was no problem in recovering as construction cost the acceleration cost incurred by HACTL with a view to achieving an operational date earlier than the Key Date of 18 August 1998, provided that any increase in the construction cost was justified in accordance with the Scheme of Control under the Franchise Agreement.[113] The Select Committee finds that Dr TOWNSEND did attempt to achieve an agreement with HACTL to advance the Key Date to tie in with AOD but was unsuccessful.

4.173 On 13 January 1998, the Government announced that the new airport would commence operation on 6 July 1998. The Government and AA should be aware of the inherent risks in opening the new airport before 18 August 1998, the Key Date stipulated in the Franchise Agreement. The Select Committee is of the view that the Government and AA were taking a great risk to have an AOD before the above-mentioned Key Date for commencement of cargo handling services in the new airport.

Source:

[112] *Letter dated 19 December 1997 from Mr Anthony CHARTER to Dr Henry TOWNSEND.*

[113] *Letter dated 23 December 1997 from Dr Henry TOWNSEND to Mr Anthony CHARTER.*

4.174 Following the announcement of the airport opening date, HACTL negotiated a supplemental agreement with GPY with a view to establishing a 75% target capacity by the end of June 1998 in the new programme. In its reports to AA Board between February 1998 and May 1998, AA Management advised that the above capacity would be available on 6 July 1998 with HACTL's "best endeavours".[114] According to Mr CHARTER, Dr Henry TOWNSEND and Mr Raymond LAI, FCD/AA, had specifically asked him whether the Key Date could be brought forward, but he had confirmed that he was not prepared to bring HACTL's contractual date forward to 6 July 1998.[115]

4.175 HACTL's Supplemental Agreement with GPY, though finalized in January 1998, was signed on 28 April 1998 following AA's approval for its terms. Under the Supplemental Agreement, GPY would accelerate the works to obtain the Occupation Permit (OP) for ST1 by 29 May 1998.

4.176 A total of 684 site instructions were issued to GPY by HACTL from 1 February to 6 July 1998 as a result of GPY's delays in the building programme, or because of defective works. ST1 should have been ready for the issue of OP by 29 May 1998 as stipulated in the Supplemental Agreement, but HACTL was only able to obtain a Temporary Occupation Permit (TOP) for ST1 on 3 July 1998. According to the letter dated 30 June 1998 from the Buildings Department, the approach of the Buildings Department had been "pragmatic and flexible". It appeared that strictly speaking ST1 was not yet ready for the issue of a TOP on 3 July 1998. This also meant that despite the Supplemental Agreement and the additional costs incurred, the slippage in the construction works of ST1 was not fully recovered.

HACTL's account of the problems on AOD

4.177 To understand the problems encountered by HACTL on AOD, the Select Committee summonsed Mr Anthony CHARTER to give evidence before the Select Committee on 29 September and 17 December 1998 respectively. The Select Committee has also studied the Experts' Report prepared by Mr

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Source:

[114] *AA Board Papers 66/98, 94/98, 114/98 and 151/98.*

[115] *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 60.*

Jerome DAY and Mr Max NIMMO on behalf of HACTL on the factors which might have had an influence on the breakdown of the Cargo Handling System (CHS) at ST1, and the Expert Report prepared by Dr Ulrich KIPPER for the Commission of Inquiry on the New Airport on information technology related problems at the new airport. The Select Committee has observed that there are differences in the observations and conclusions in these two experts' reports.

4.178 Mr Anthony CHARTER highlighted to the Select Committee at the hearing the relationship of the various problems that occurred on 6 July 1998 leading to the breakdown of ST1 on AOD. In particular, he drew members' attention to the following "gradual downwards spiral" starting from the overnight move of airport from Kai Tak[116]:

(a) The overnight move of airport from Kai Tak transferred 1000 containers into CHS of ST1. The task of getting these containers into CHS fell behind resulting in a large number of containers being stacked in the lorry driveway. Mr Anthony CHARTER admitted that HACTL had not originally anticipated the situation.

(b) Level of mechanical faults of CHS was unexpectedly high on AOD and HACTL started to have difficulties entering the inbound loads into CHS. Confusion on the airside on AOD also made it difficult for HACTL to locate aircraft containers.

(c) As a result of the chaos on both the landside and airside, HACTL staff could not clear the containers into CHS on both sides of the systems. The end result was that dollies were being occupied for longer periods than expected. HACTL staff then used the manual mode of operations to by-pass the automatic mode in order to get the containers more quickly into CHS.

Source:

[116] *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, pages 4 and 5.*

(d) The consequence of using the manual mode of operation was that the records of the whereabouts of the containers in the system started to become inaccurate. In order to locate a particular container, HACTL staff started interrogating the system and producing printouts from the computer system. At the same time, the computer system started to get overloaded because of the high level of faults. Faults reports built up and the workload of the computer system continued to the point where HACTL was getting a slow response from the computers.

(e) Because of the slow response of the computer system, HACTL staff reverted to manual operations again which led to further inaccuracies in CHS. The data inaccuracy led to a mismatch between HACTL's inventory control system and LCS which led to further system slow-down. There was a gradual downwards spiral to the point where there was a total log-jam, and the only alternative at that stage was to clear the container storage system.

4.179 At the hearing on 29 September 1998, Mr Anthony CHARTER pointed out that a large number of contractor workers and cleaners were working hard in ST1 to clear the building debris, and this generated a lot of airborne dust which affected the sensors and increased the level of mechanical faults.[117] Some concrete grinding activities which were part of the building works also generated dust.[118] Notwithstanding the above, Mr CHARTER admitted at the hearing that "Dust maybe has been overplayed to a degree …… we (HACTL) were also suffering other mechanical problems as well."[119] Moreover, he agreed that "too much emphasis was put on it in the early stages."[120]

4.180 In addition to the above, Mr Anthony CHARTER also pointed out the following contributing factors to the problems in ST1 on AOD:

Source:

[117] *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 7.*
[118] *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 92.*
[119] *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 93.*
[120] *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 94.*

(a) HACTL did not have the opportunity of trialling the system with the full live cargo load. The full load on AOD led to many equipment faults and therefore slowed down the response of the computers.[121]

(b) The failure of FDDS affected the Resources Management System (RMS) at ST1. RMS depended on accurate scheduling data for deploying manpower resource at ST1, and the lack of data made the operation difficult.[122]

(c) The off-schedule of aircraft had a snow-ball effect and resulted in a lack of dollies.[123]

(d) HACTL staff, airline staff and Customs and Excise staff were not perhaps totally familiar with the new C&E Procedures introduced by the Customs and Excise Department at ST1. It affected the clearance on up to 25 flights.[124]

(e) There was an interface problem among the three ramp handling operators and two cargo terminal operators in the new airport whereas there was only one ramp handling operator and one air cargo terminal operator at Kai Tak;[125]

(f) The new security check procedure at the new airport which required all ramp equipment from the cargo area to be searched at different security check-points caused some delay;[126] and

(g) There were teething problems which were expected by HACTL.[127]

Source:

121 *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 7.*
122 *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 6.*
123 *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 7.*
124 *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 6.*
125 *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 6.*
126 *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, pages 6 and 7.*
127 *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 10.*

4.181 Mr Anthony CHARTER advised that the rate of faults in CHS was higher than expected so much so that there were similar failings on adjacent stacker cranes in the CHS.[128]

Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO on behalf of HACTL

4.182 HACTL commissioned two experts, Mr Jerome DAY and Mr Max NIMMO, to investigate factors which might have had an influence upon the breakdown of the CHS at ST1 on AOD[129]. The experts published their reports on 14 November 1998.

4.183 The two experts have reached the conclusion that the following factors caused the breakdown of the cargo handling systems:

(a) Automatic input of flight information into the Community System for Air Cargo (COSAC) could not be effected owing to the failure of FDDS[130] and flight departure delays[131]. This in turn disabled RMS to trigger cargo movements.

(b) Many items of equipment were switched to the manual mode because of errors caused by defects in such equipment and faulty or dirty sensors.[132] This led to a perception that CHS had slowed down with the result that more equipment was switched to the manual mode.

Source:

128 *Minutes of evidence of the 5th public hearing of the Select Committee, 29 September 1998, page 17.*
129 *Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO, page 7.*
130 *Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO, pages 37.*
131 *Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO, pages 37.*
132 *Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO, page 40.*

(c) Input errors and omissions caused by (a) and (b) above resulted in inaccurate inventory and this led to the suspension of the cargo transfer process. HACTL staff failed to keep COSAC's inventory records manually synchronized with system records. A serious inventory mismatch resulted which reduced the overall integrity of the inventory records to an unacceptable level.[133]

4.184 Both experts have also concluded that the high number of faults experienced on AOD had also been caused by dirty sensors, sensor misalignment, sensor safety interlocks triggered by cargo packaging; and ULDs jamming on the conveyors.[134] They also pointed out that deletion of inventory records due to human error had caused HACTL to believe that the inventory mismatch might have arisen from some fundamental defects in the computer software, which shook HACTL's confidence in the computer system.[135]

4.185 The experts also pointed out that the lack of flight information and the general shambles caused by delayed flight departures aggravated the shortage of dollies on AOD. The system was only perceived to be too slow in relation to the unrealistic expectations and perceptions of the operators in view of the unplanned and unexpected time restrictions to meet the excessive demand.[136]

Source:

[133] *Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO, page 38.*
[134] *Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO, page 57.*
[135] *Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO, pages 49 and 50.*
[136] *Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO, page 42.*

4.186 In summing up their findings, both experts concluded that the primary cause of the shutdown of air cargo handling service in HACTL was the failure of FDDS[137] which resulted in chaotic delivery of cargo to HACTL. They believed that CHS was ready for AOD[138] and only CSS, which included sensors, was ultimately involved in the breakdown.[139]

Expert Report prepared by Dr Ulrich KIPPER for the Commission of Inquiry on the New Airport

4.187 Dr Ulrich KIPPER was appointed by the Commission of Inquiry on the New Airport to assist the Commission in understanding the information technology, computer and telecommunication related aspects of the problems facing the new airport. The Expert Report was issued on 6 December 1998.[140]

4.188 Dr Ulrich KIPPER pointed out that CSS/BSS - LCS software bug[141], manual operation of CHS[142], cargo handling process slowdown[143] and inventory mismatch[144] were the major problems leading to the CHS breakdown on AOD.

4.189 As regards the software of CHS, Dr Ulrich KIPPER pointed out that HACTL did know the slow response prior to AOD. The starting problem encountered by HACTL on AOD was caused by the same problems identified in the testing conducted between 3 July and 8 July 1998.[145] He also noted that there was a slow response of BSS roughly one week after AOD. One cause of the system slowness was insufficient performance. In fact, the computer capacity was increased in August by 250%.[146] He therefore assumed that HACTL had modified the CSS/BSS software to avoid equipment fault message or message causing system slowdown generated by CHS on AOD.[147]

Source:

137 *Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO, page 46.*
138 *Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO, page 58.*
139 *Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO, page 39.*
140 *Expert Report prepare by Dr Ulrich KIPPER, page 7.*
141 *Expert Report prepare by Dr Ulrich KIPPER, page 106 to 108.*
142 *Expert Report prepare by Dr Ulrich KIPPER, pages 94 and 95.*
143 *Expert Report prepare by Dr Ulrich KIPPER, page 96.*
144 *Expert Report prepare by Dr Ulrich KIPPER, page 108.*
145 *Expert Report prepare by Dr Ulrich KIPPER, page 107.*
146 *Expert Report prepare by Dr Ulrich KIPPER, page 107.*
147 *Expert Report prepare by Dr Ulrich KIPPER, page 108.*

4.190 On the dust problem, the expert pointed out that dust would not cause slow down of the system or affect the response time. The only possible way in which dust could affect the response time was if there were a lot of failure messages. He therefore concluded that the dust factor had only a minor effect on CHS breakdown.[148]

4.191 In his summary, Dr Ulrich KIPPER pointed out that CHS software problems were the major cause of the slowdown of HACTL's cargo handling process which forced the operations staff to operate CHS in the manual mode. The major consequential problems such as the cargo handling process slowdown and manual cargo operations had caused the breakdown of HACTL's CHS.

4.192 At the hearing on 17 December 1998, Mr Anthony CHARTER reiterated that all issues contributing to the problems at ST1 on AOD had been identified in his original statements. Evidence that had come up since then only threw a different light to some extent on the importance of the various elements that HACTL identified, rather than changed any of the factors that HACTL had felt contributory originally[149].

4.193 On the system testing, Mr Anthony CHARTER referred to the findings of the Experts' Report prepared by Mr Jerome DAY and Mr Max NIMMO and advised that both experts basically felt that the testing HACTL had conducted indicated that the system was capable of handling the loads on AOD if there had not been other contributory factors.[150] He also admitted that HACTL had to condense testing into a much shorter period, and to make choices on the scope of the testing to concentrate on testing those elements that HACTL needed to be operational on AOD.[151]

4.194 In response to the Select Committee's question whether sufficient and adequate training had been carried out for HACTL staff in view of the fact that the construction of the ST1 building had experienced significant delay, Mr

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Source:

148 *Expert Report prepare by Dr Ulrich KIPPER, page 98.*

149 *Minutes of evidence of the 30th public hearing of the Select Committee, 17 December 1998, page 3.*

150 *Minutes of evidence of the 30th public hearing of the Select Committee, 17 December 1998, page 5.*

151 *Minutes of evidence of the 30th public hearing of the Select Committee, 17 December 1998, page 12.*

Anthony CHARTER agreed that problems due to the construction delay had resulted in the familiarization training for HACTL staff being curtailed and this might have contributed to the increased incidences of human error on cargo handling.[152] He admitted that there was a proportion of staff who had only limited familiarization training prior to AOD.[153]

4.195 Mr Anthony CHARTER also emphasized he did not agree with Dr Ulrich KIPPER's report which indicated that CHS breakdown was due to software problems of CSS.[154] He said that the breakdown was mainly due to human error.[155] Nevertheless, he pointed out that LCS development had not been finalized but whatever was not finalized was not terribly important to HACTL in terms of their processing capacity.[156]

4.196 The Select Committee notes that there are disparities in the conclusions in the Experts' Report prepared by Jerome DAY and Mr Max NIMMO and that prepared by Dr KIPPER. However, the Select Committee has not attempted to come to any conclusion on the differences in opinion between them. The Select Committee considers that as the major franchisee to deliver air cargo handling service, HACTL should be held responsible for the total breakdown of service on AOD and the length of time taken to resume normal service.

4.197 The Select Committee also considers that the Government and AA should have been aware of the inherent risks in relying on HACTL's "best endeavours" programme for it to deliver the target operational capacity before the Key Date.

Source:

[152] *Minutes of evidence of the 30th public hearing of the Select Committee, 17 December 1998, page 20.*

[153] *Minutes of evidence of the 30th public hearing of the Select Committee, 17 December 1998, page 22*

[154] *Minutes of evidence of the 30th public hearing of the Select Committee, 17 December 1998, page 11.*

[155] *Minutes of evidence of the 30th public hearing of the Select Committee, 17 December 1998, page 33.*

[156] *Minutes of evidence of the 30th public hearing of the Select Committee, 17 December 1998, page 38.*