

October 30, 1972

Subject: Monitoring Report #1 (Construction Phase D -  
Superstructure work from concrete floor pours on)

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project: 72164 - 1 (for field)

Date of Monitoring: October 26, 1972 (working day 211)

Actions taken:

- Attended pre construction conference

General Summary

This meeting was a pre construction conference to review the present status of all work on the job and to officially initiate communication between the various parties to the project. The Phase D contract has been awarded and should be confirmed for go-ahead by next Thursday, November 2, 1972 (working day 216). The effective date of the go-ahead probably will be November 6, 1972 (working day 218). Presently there are several administrative matters that are being worked upon by the contractors and others involved. Among these are the affirmative action plan, a cost breakdown, the subcontractor lists and obtaining a building permit from Remulus.

Structural steel for Phase A is still due to start on or about November 6th although there has been some slight hedging on this and it appears now that erection will be sometime the week of November 6th, 1972. I urge that every effort be made to start structural steel as close to November 6th as possible since winter weather is closing in on us quickly and we will need all the time we can get for favorable concrete weather.

It was mentioned at the meeting that there have been some conversations by the metal deck supplier and erector that they will hold off erecting deck until the majority of the structural steel has been put in place, plumbed and bolted. This is not a recommended course of action since it is critical that Phase D contractors be given as much room to form, reinforce and pour concrete in the months of November and December when weather is still favorable to this kind of operation.

Monitoring Report #1  
(Construction Phase D)  
10-20-72  
Page two

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Of importance is the availability of the apron to the west of the project for storage, shanties and other related contract operations. Mr. Kania cautioned that the missing strip of paving between the International Terminal and the apron will be placed next spring by the paving contractor and therefore, should be kept relatively free of structures. Site restrictions discussion occupied a considerable part of the meeting and I recommend a careful study of the site restrictions and operational conditions be made by all parties to insure smooth working of the job.

Another item becoming quite important is the erection of the canopy supported by the sculptured columns. I shall be in touch with Mr. Ken Hafer regarding this matter so that we can have information available to us at our initial diagramming session.

Mr. Kania requested that Mr. Samuels and I set a diagramming session which we will do early next week. The meeting will be held at the airport offices and will concern itself with early critical matters that were reviewed at this meeting.

Regular job meetings tentatively will be every two weeks on Tuesdays at 1:30 P.M. The first meeting will be on Monday, November 6, 1972 since the regular meeting day, November 7, 1972, is an election day and a holiday.

An item that should be watched carefully is concrete control. There has been some difficulty on the Phase A work and a discussion was held regarding how to avoid these problems in Phase D. Mr. Shea of the architectural office discussed architectural concrete briefly, pointing out that some experimentation with architectural concrete surfaces would be allowed on below grade areas and that quality control of concrete surfaces was going to be watched very carefully on above grade work. Approval measures should be worked out in advance so minimal delays are encountered in the actual field operation.

Mr. Bill Boaz discussed the importance of early erection of metal deck relative to construction of poured floor slabs. He urged that every effort be made to get the deck in place as soon as possible.

I shall be in touch with Mr. Samuels early next week to set the first diagramming session and shall notify the Wayne County Road Commission and other concerned persons about the date.

Ralph J. Stephenson, P.E.

RJS/m

Monitoring Report #1  
(Construction Phase D)  
10-30-72  
Page three

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Chas. Van Deusen  
Mr. Ken Hafer

4

November 14, 1972

Subject: Monitoring Report #2 (Construction - Issue D)

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project: 72:64 - F

Date of Monitoring: November 10, 1972 (working day 222)

Actions taken:

- Inspected field progress
- Began preliminary planning for Issue D work

General Summary

The Issue D general contractor and key subcontractors attended this meeting for the purpose of beginning early job planning. We concentrated upon discussing major sequencing, delivery of critical material and equipment to the job and general meshing of the work with erection of structural steel. It was basically decided that early concrete pours would be concentrated at the high roof level, elevation 692'6". The reason was twofold. At the lower levels trench duct for electrical conduit is extensively utilized in the supported slabs. It is desirable, where possible, to set this underfloor installation prior to pouring the deck. Presently it appears that shop drawings for trench duct are four weeks away. Allowing two weeks for checking shop drawings and twelve weeks for fabrication and delivery brings trench duct on the job 90 working days from today. This very long lead time makes it advisable to concentrate concrete pours elsewhere than the supported mezzanine and lounge level.

Also, the roof deck, when cast, will form a relatively impervious surface to heavy, outside weather and thus allow at least partial protection on the major horizontal surface, prior to roofing being laid. It also will allow the roof to be placed whenever weather allows during the winter and spring months.

18  
5  
90

Monitoring Report #2  
(Construction - Issue D)  
11-14-72  
Page two

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Concurrent with roof pours will be, where possible, construction of concrete decks at the walkways and equipment rooms, elevations 681' and slightly below. This will provide working areas for crews in alternate locations to stagger pours and provide early space for mechanical and electrical equipment as it arrives on the job site. The intent is to provide adequate winter protection to maintain pouring operations throughout the winter. It may be that the contractors will concentrate on completing concrete decks in Divisions 1 and 2 (column lines 12 through 19) at the roof and walkway/equipment room levels prior to moving along to Divisions 3, 4, and 5 at column line 19 north through column line 28. It might be possible to leave large pour areas free of concrete until trench duct arrives, meanwhile casting unducted sections of the mezzanine and lounge floors.

Two elements to be watched at the lower levels include shear walls and stair towers, along with below grade structural, electrical and mechanical work at grade level. Issue D work includes a large number of pits and other such structures. These will require careful coordination with the extensive underground installation by the mechanical and electrical trades. It does not appear that presently the job can accommodate work at this level until structural steel has moved substantially along. However, it is going to be a difficult area and one that should be scheduled early. To be emphasized is the need for the shear walls although it is anticipated that construction bracing will be adequate to allow floor decks to be poured.

Planning will resume on Tuesday, November 21st, immediately following the next regularly scheduled job meeting. At the diagramming session we plan to consolidate close-in planning and move along to start of rough interior work. Therefore, all contractors involved should be prepared to outline and set down their work sequence in detail, along with being able to provide dates on long lead time delivery items.

So far as field work is concerned, Issue A structural steel arrived in force on the job site yesterday and mobilization with crews and some crane work was started today, Friday, November 10, 1972 (working day 222). The original starting date for this work was November 6, 1972 (working day 218), so the job currently lags five working days. However, it is anticipated by commitments from the structural steel erector that this time should be picked up over the next three or four weeks. The weather is now turning chilly with heavy weather expected which might delay the project over the next month to month and a half. Therefore, it is critical that as much early work get done as is possible.

Monitoring Report #2  
(Construction - Issue D)  
11-14-72  
Page three

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Foundation work is substantially complete on the flight stations with the exception of isolated piers and backfilling. Interior filling and fine grading is moving reasonably well and should be completed soon. The Issue D contractor is now preparing to mobilize and move on the site. I suggest that this be done quickly so as to get field operations started for the Issue D work.

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Chas. Van Deusen  
Mr. Ken Hafer

*Ru TIT  
Should also  
be sent to  
Don Nowak  
@ MK*

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

November 27, 1972

**Subject: Monitoring Report #3 (Construction - Issue D)**

**New International Terminal  
Metropolitan Airport  
Detroit, Michigan**

**Project: 72164 - F**

**Date of Monitoring: November 21, 1972 (working day 229)**

**Actions taken:**

- Participated in construction conference
- Continued diagramming logic for structural elements of building

**General Summary**

The contractors on Issue D and Issue A met at the morning meeting and began correlating the two organizations' work. It will be very important for close cooperation to be developed between the two working groups to effect a smooth transfer of operations from Issue A to Issue D. An item of immediate importance discussed by the architect and the owner regards contracts for escalators. Due to the need for tailor fitting the escalator frame to the structural steel, minor changes may be required to the structural steel presently detailed and perhaps fabricated. This matter should be looked into immediately since of highest priority at the present time is to complete proper erection of all structural steel.

Most major subcontractors have been selected for Issue D and we will meet early next week to review the sequence of work as presently planned. It is important now to define the critical deliveries needed for expediting work on the project. Some of these already identified are trench duct at the lounge and mezzanine levels; precast materials, particularly column enclosures; spray-on fireproofing work, some of which will have to be done before close-in elements can be erected; conveyor information and inserts needed for casting into ceilings, walls and floors of conveyor tunnels; long lead time mechanical and electrical equipment, particularly those pieces that must be set before the building is completely closed in; items required

Monitoring Report #3  
(Construction - Issue D)  
11-27-72  
Page two

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

for special installations at tenant spaces, particularly Host areas; early resteel for stair tower foundations, conveyor pits and early concrete decks (the first concrete slabs to be cast presently are at the high roof level); precast concrete canopy elements (presently due to be delivered on the job site the month of July 1973); hollow metal and elevator door frames; and elevator and escalator equipment. It is expected that our early subcontractor meetings will isolate other important early delivery items and these will be concentrated upon in the next few weeks.

Early diagramming work shows that this project is going to be a very tight time scheduled job. It is critical that work be planned on through this winter in such fashion that as much construction toward total close-in is accomplished by late spring. Subcontractors, particularly sheet metal and plumbing, will be expected to move onto the project as soon as areas are available structurally for them to start installation of rough work such as sheet metal, plumbing and rough electrical.

Because of the size and geographic spread of the job, particularly as we work out into the flight station areas and concourses, it will be necessary to carefully schedule work crews to insure that all areas of the job are given adequate, concurrent attention.

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Chas. Van Deusen  
Mr. Ken Hafer

*Mr. Don Towak*

*Copy typed & sent*

*Mr. Donald Towak  
Markward & Karafilis  
11-30-72*

*W. Edgar*



RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER

January 5, 1973

**Subject: Monitoring Report #4 (Construction - Issue A and D)**

**Note: This is a continuation of the Issue D series. However, since Issue A work is drawing to a close, the two will be combined from now on in a continuation of the Issue D sequence.**

**New International Terminal**

**Metropolitan Airport, Detroit, Michigan**

**Project: 72164 - F**

**Date of Monitoring: December 19, 1972 (working day 248) and  
January 2, 1973 (working day 257)**

**Actions taken:**

- Inspected project
- Participated in construction conference
- Continued diagramming logic for Issue D work
- Evaluated field progress

**General Summary**

The project was monitored on both December 19, 1972 and January 2, 1973. At the December 19th evaluation, the lag was about 14 working days in erection, plumbing and bolting of structural steel and erection of metal deck. On January 2nd the lag had been reduced in plumbing and bolting structural steel to approximately ten working days. This is somewhat of an improvement; however, we are now involved in a very critical action of getting Issue D concrete work underway. Of major importance is placing metal deck, getting it welded, and getting shear studs in place so forming, reinforcing and pouring of supported decks can begin.

**Monitoring Report #4  
(Construction - Issue A and D)  
1-5-73  
Page two**

Also now of critical importance is completion of Issue A grading around the building so temporary protection can be placed. These problems were discussed in detail at both the December 19th meeting and the January 2nd meeting. It is absolutely imperative that all hindrances to the effective start of Issue D work be cleared immediately since we are moving into the most bitter part of the winter and the most difficult in which to construct concrete work.

Approximately ten bays of structural steel had been erected as of January 2, 1973. This represents divisions 1, 2 and 3, of which divisions 1 and 2 are substantially bolted. Metal deck is still not complete in division 1 and it is to be emphasized that the intent is to complete each division with metal deck so that work can proceed in each division on the Issue D contract.

At both the December 19th and January 2nd sessions we continued extensive detailing of a plan of work for Issue D work. The results of our December 19th meeting shown on Issue P4 of the Issue D network were distributed to Mr. Sidney Hardeman. Mr. Hardeman, in turn, distributed these to the key sub contractors, the owner and the architect.

Additional diagramming was done on January 2, 1973 of summary plans at each of the major work areas. It is anticipated presently that the building will be broken into nine major areas of one third of the building each - at the mezzanine, lounge and apron levels. Concourses and flight stations will be kept as separate entities. Results of this preliminary diagramming show that the close-in of the building is critical, and among those important items influencing close-in are spray-on fireproofing, precast concrete panels and resinous precast panels. Masonry is also important and careful sequencing of the work as shown in our plan will be critical to maintaining proper job performance.

As part of our planning work in Issue D, we carefully reviewed the matter of dovetailing Issue F site work with the building construction. Issue F site work deals with the parking lots and peripheral roads around the International Building. This contract will be let sometime in the spring or early summer and planning is now being done for the optimum meshing of this work with construction of the terminal building itself. Our diagramming reaffirms the problem that we face of a very, very tight schedule on all parts of the structure. It will be essential to consider the concourses and flight stations as jobs which must be constructed concurrently with and perhaps independently of the main terminal building. The concourses are major construction programs in themselves and must be moved into work just as rapidly as possible so that they can be completed as part of the total building package.

**RALPH J. STEPHENSON, P. E.**  
CONSULTING ENGINEER

**Monitoring Report #4**  
**(Construction - Issue A and D)**  
**1-5-73**  
**Page three**

At our next meeting we will attempt to complete the summary diagram of the main building interior work and proceed to prepare preliminary network diagrams of the concourse and flight stations, along with adjoining stair towers. The next diagramming session will be scheduled the week of January 8, 1973. In addition, we will plan to continue planning work after the next regularly scheduled job meeting on January 16, 1973.

**Ralph J. Stephenson, P.E.**

**RJS/m**

**To: Mr. Richard Samuels**  
**Mr. Robert Kania**  
**Mr. Chas. Van Deusen**  
**Mr. Ken Hafer**

January 19, 1973

Subject: Monitoring Report #5 (Construction - Issue A and D)

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project: 72:64 - F

Date of Monitoring: January 16, 1973 (working day 266)

Actions taken:

- Inspected project
- Conferred with Markward & Karafilis re: job progress
- Participated in construction conference
- Continue diagramming Issue D logic
- Evaluated field progress

General Summary

As of January 16, 1973, (working day 266) the project has developed some very serious lags primarily in completion of plumbing and bolting structural steel in divisions one and two, completion of shear studs in divisions one and two, erection of metal floor forms in division one, and a resulting lag in start of constructing mezzanine decks in divisions one and two. The lag ranges from fourteen (14) to nineteen (19) working days with the larger lag being in metal deck erection.

It has been repeatedly emphasized at construction meetings that it is of prime importance to ready division one and then division two sequentially so floor pour operations can begin immediately. The erection of metal deck at support floors and roof has alternated throughout the early erection of structural steel and metal form and as a result no one section is totally complete as of January 16, 1973 (working day 266). Division one was due to be finished total no later than December 18, 1972 (working day 247). It is not yet totally complete. Also, miscellaneous bolting up of structural steel in division one is not yet complete and several shear studs welded to the structural steel have yet to be replaced.

In addition, shake out of metal floor form on the job has hindered erection of weather protection, particularly on the west side of the building. It

**Monitoring Report #5**  
**New International Terminal**  
**(Construction - Issues A and D)**  
**January 19, 1973**  
**Page two**

**RALPH J. STEPHENSON, P.E.**  
**CONSULTING ENGINEER**

is of utmost importance that both the structural steel erector and the metal deck erector concentrate their activities within the next three or four days on completing divisions one and two and moving totally out of these areas so that the Issue D contractor can meaningfully start his floor forming operations. Issue D operation currently lags by approximately fourteen (14) working days and the lag is becoming extremely serious. Also, of continuing critical importance is grading off around the building at the apron level so that all temporary protection and access can be erected and maintained without hindrance. The Issue A general contractor promised at this meeting that this work would begin Wednesday, January 17, 1973, and proceed immediately on through to completion by the end of this week.

There are many such small but critical areas of interfacing between the Issue A and Issue D contractors that must be resolved so work can proceed smoothly in Issue D. I urge that every attention be exerted by the owner, the architect/engineer and the contractors to resolve these problems and get work underway for Issue D immediately at the supported floors.

An item of importance to the schedule concerns the camber in the heavy roof trusses. These roof trusses support by hangers, the mechanical mezzanine, the lounge level and the mezzanine supported floors as well as the roof deck. The required camber on the trusses according to the drawings is one inch (1"). There is some indication that this has exceeded one inch (1") and it was pointed out that the floor pours as they are made successively at different elevations will tend to flatten out the camber. Thus, it becomes important now to establish an elevation to which the various early floors will be poured. The steel erector and the general contractor in conjunction with the owner are making an immediate check on elevations and will have this information to the contractor for Issue D within two days. I suggest this information be evaluated so that an early answer on pour elevations is made.

On Friday, January 12, 1973, we continued extensive diagramming on the major building interior work. The main building has been broken into nine (9) sections, three at each of three levels, the mezzanine, the lounge and apron levels, and into south, central and north thirds. The extent of these is shown in the preliminary network issue P-6 dated January 12, 1973. It is, according to our preliminary evaluation realistic to consider the possibility of coming close to our presently projected total contract and date if work can proceed immediately on Issue D. However, any delays to the job at the present time by Issue A work will make it increasingly difficult to achieve the presently project schedule. It should be pointed out that issue P-6 is preliminary and will be reviewed by all major contractors. It has been printed by the Issue D general contractor and distributed to the mechanical, electrical and other major subcontractors.

Monitoring Report #5  
New International Terminal  
(Construction - Issues A and D)  
January 19, 1973  
Page three

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Pin pointing critical items on the diagram needing attention in the near future we find that the following are critical over the next three month period:

- Cured concrete block
- Exterior and interior masonry
- Approvals on all concrete
- Electrical in-floor work (at west half of division one mezzanine)
- Mechanical in-floor work (at west half of division one mezzanine)
- Spray on fireproofing at the exterior in division one
- Insulation and roofing at the high roof
- Precast concrete covers at the east elevation (divisions one and two)
- Exterior masonry at the east elevation
- High and low skylights
- Spray on fireproofing at the interior south mezzanine
- Resinous panels
- Sheet metal ductwork at the interior south mezzanine
- Rough mechanical piping at the interior south mezzanine
- Rough electrical work at the interior south mezzanine

It should be clearly understood that the above items merely start the sequence and that a continuing supply of material and labor to carry out these tasks must be furnished to the job once the action starts. Of most importance at the present time appears to be spray-on fireproofing which is due to start within the next two to three months, exterior pre-cast due to start immediately after spray-on, and interior pre-cast resinous panels which must cover many of the structural elements of the building. Also of importance is underfloor duct and mechanical and electrical equipment at the mezzanine mechanical levels.

Monitoring Report #5  
New International Terminal  
(Construction - Issue A and D)  
January 19, 1973  
Page four

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Review

At present the project ranges from fourteen (14) to nineteen (19) working days behind target dates. The lag is primarily in completion of structural steel and metal deck in divisions one and two. These are absolutely critical areas and in spite of the fact that structural steel has now been raised for practically the entire building, division one is not yet completely bolted nor is metal deck completely erected. The contractor for Issue D is having difficulty beginning his floor work due to the delays and it is imperative they be resolved within the next couple of days.

At the construction meeting all concerned promised that they would expedite this work to the greatest extent. The Issue D contractor will be pouring footings for the conveyor pits at the south end of the building sometime within the next week. It is important that concrete approvals, and mix designs be obtained immediately for evaluation and acceptance.

Ralph J. Stephenson, P.E.

RJS:dv

TO: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Deusen  
Mr. Ken Hafer  
Mr. Don Redmond

February 12, 1973

**Subject: Monitoring Report #6 (Construction - Issue A and D)**

**New International Terminal  
Metropolitan Airport  
Detroit, Michigan**

**Project: 72,64 - F**

**Date of Monitoring: January 30, 1973 (working day 276)**

**Actions taken:**

- Inspected project
- Participated in construction conference
- Continued diagramming Issue D logic
- Evaluated field progress

**General Summary**

As of January 30, 1973 (working day 276) structural steel erection is substantially complete; plumbing and bolting is proceeding in divisions 4 and 5 and it is estimated that the structural steel erector should be off the project very shortly.

Metal roof deck is still a bottleneck and currently lags the project schedule by 24 working days. The metal deck erector said that it will take approximately three weeks to complete the remainder of the work.

There are also other miscellaneous problems including water supply to the job, parking and grading around the building. However, there are no major road blocks to proceeding with construction of supported decks.

There is still a relatively important matter of deflections to resolve so floor slabs can be poured to the proper elevation to account for progressive reduction of upward camber in the structural steel of the building. The steel erector promised to provide readings on the entire structure several days ago. These are still being made and should be expedited to the greatest extent possible. They are critical to continued progress.



**Monitoring Report #6**  
**(Construction - Issue A and D)**  
**2-12-73**  
**Page two**

Currently mass excavation for the south end conveyor area is in work and presently lags anticipated early start/early finish dates by 2 to 6 working days. Shear walls have started along column line D between columns 15 and 16. Some temporary protection has been erected at the mezzanine and lounge levels but this work which was due to start in late December has been delayed by slow completion of phase A and difficulty in getting phase D underway. The first pour is due to be made at the division 1 mezzanine. We had originally scheduled it for completion on January 10, 1973. However, it is now estimated that because of the delays to the project, this pour may not be made until early or mid-February. This would result in about a one month lag on Issue D.

After the construction meeting we met again to continue discussions about the Issue D work. The escalator contractor said that he would like to start his trusses about the middle of May and would need power to the job by May 30th. The work on flight stations and concourse concrete is going to be critical to start in the near future since it is anticipated this structure will be very complex to form and pour.

At our next meeting we will continue detailed discussions of interior and exterior work on the project, particularly as it affects spray-on fire-proofing and other trades that will be critical to the close-in process.

**Ralph J. Stephenson, P.E.**

**RJS/m**

**To: Mr. Richard Samuels**  
**Mr. Robert Kanis**  
**Mr. Charles Van Deusen**  
**Mr. Ken Hafer**  
**Mr. Don Redmond**  
**Mr. Wally Van Nuck**  
**Mr. Sid Hardeman**

RAIPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

February 15, 1973

Subject: Monitoring Report #7 (Construction - Issue A and D)

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project: 72:56 - F

Date of Monitoring: February 13, 1973 (working day 31 from  
1973-74 working day calendar)

Actions Taken:

- Inspected project
- Participated in construction conference
- Prepared preliminary networks for flight stations  
and concrete structures
- Evaluated field progress

General Summary:

As of February 13, 1973 (working day 31), the structural steel erection has moved off the job and by Thursday evening, it is anticipated all metal deck with the exception of miscellaneous areas that have been left out for replacement of damaged material will be complete. Most of the interfacing problems between the Issue A and Issue D contractors have been resolved and at this point in time there appears to be few, if any, barriers to full progress of Issue B work.

One major item that should be cleared immediately is provision by Issue A contractors of adequate elevations and locational drawings for the use of the Issue D contractor in his layout and floor work. These elevations are particularly important to properly accommodate the floor slab adjustments due to the number in the roof trusses. It is expected that the information can be gained momentarily. Meanwhile, a directive has been given in respect to the floor elevations to which the Issue D contractor is to pass.

Currently Issue D work is lagging by approximately 30 working days, primarily in start of construction on division 1 and 2 west half mainline floor deck. This deck was due to be well

Monitoring Report #7  
(Construction - Issue A and D)  
2-15-73  
Page two

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

in work by the first or second week in January. It is still moving very slowly due to the many unresolved problems that have been mentioned in previous reports. Mr. Van Husk, superintendent for the Issue D contractor, felt that he could make his first pour on or about February 23, 1973 (working day 39). If this is possible it will give a pour equivalent to that expected to be made by January 31, 1973 (working day 22). This, in effect, would reduce the lag to approximately 17 working days. However, it is advisable at this time to measure the lag in terms of current status. Presently there is pending a possible change in resinous panels to a plaster material. Working drawings are being revised to obtain quotations on possible cost savings and this work is expected to be issued within the next two or three weeks. The revisions should be carefully evaluated in light of the scheduling and this will be done as soon as additional information is available.

At this meeting we went through all current pending questions about work on Issue B masonry and floor pours. Each of these was resolved or answered at the meeting and at the completion of the discussion no unresolved points remained. It was agreed by all parties concerned that work could proceed immediately on both masonry and on floor pour work.

Following the construction meeting we resumed diagramming flight stations and concourses. These are very complex structures and our planning indicated that it is going to be extremely difficult to bring the project home on schedule at the concourse and flight station areas due to the late start on the work. We worked over the sequencing in detail and Mr. Hardeman and Mr. Smith will review the proposed plan to see what can be done to bring the schedule in line with the current target dates. We shall continue work on this very important element of the project in the near future. It appears presently that construction of flight stations and concourses may prove to be one of the more difficult areas of the entire building. I strongly urge that everyone concerned with this section of the project give it careful planning attention since detailed scheduling of the areas is going to be a critical part of our diagramming work.

Another area that is potentially troublesome is the rented concession spaces. As of February 13, 1973 leases have not been consummated, to the best of my knowledge, for concession spaces. The decision has been made to move ahead and construct floor slabs now, coming back later when the spaces are leased and remodeling them to accommodate the tenant. This is a very real potential delay and I urge that everything possible be done to resolve the leases and layout of the spaces involved.

Monitoring Report #7  
(Conservation - Issues A and B)  
B-13-73  
Page three

In light of this monitoring evaluation it appears to me that there is a distinct possibility the project could remain from one to two months behind current projected schedule dates and since the schedule has been tight from the beginning, chances of picking up time appear somewhat remote at this time. We will continue our planning procedures on the basis that the target end date is still mid-February of 1978. However, I want to alert all parties concerned with operating the facility that the loss in time over the past three months for various reasons as outlined has posed serious completion date problems. To my best evaluation at the present time, it appears that we should begin considering that the project may extend perhaps as much as two months beyond our current target date. If further delays are encountered of a similar nature to those we have already run into and if we do not resolve the leased space matter promptly, this delay may increase. I suggest we wait until the impact of the bulletin change from resinous panels to plaster can be fully evaluated and also, to analyze the early floor pours before any final decisions are made on this matter.

Meanwhile, I am drafting the close-in network for the main terminal and will run this as a partial computer program to provide close-in direction for the project over the next six month period. Consequently, we shall, as soon as adequate data is available, complete our interior finish networks.

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Richard Samuels  
Mr. Robert Kunkle  
Mr. Charles Van Dusen  
Mr. Ken Hafer  
Mr. Don Rodman  
Mr. Billy Van Hook  
Mr. Sid Hardeman

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

March 1, 1973

Subject: Monitoring Report #3 (Construction - Issue A and B)

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project: 73:64 - F

Date of Monitoring: February 27, 1973 (working day 41)

Actions taken:

- Inspected project
- Participated in construction conference
- Continued diagramming of flight stations and concourse structures
- Evaluated job progress

General Summary

As of February 27, 1973 (working day 41), the project lags early start/early finish dates in Issue B by approximately 37 working days. This represents a loss of seven out of the last ten working days and should be cause for serious concern.

The Issue B contractor has now substantially formed and has set some in-floor work for the initial floor pour at the mezzanine level. However, various and sundry items continue to restrain the actual pour. These were gone over item by item at the construction meeting and it is now projected that the maiden pour on the project at the mezzanine level will be made on Thursday or Friday, March 1st or March 2nd.

One of the project's major problems continues to be direction insofar as the elevation of floor slabs is concerned. The camber built into the roof trusses is such that to obtain reasonably level finished floors, the slabs, particularly in early pouring sequences, must be poured at a higher elevation than that desired in the final construction. Both formal and informal directives have been given the contractor but because of the confusion, I urge that a clearcut definition of what is required be given to the field forces by the owner, and the architect/engineer in comprehensive, unmistakably directive form.

Another element of concern has been the long-standing difficulties in coordinating turn-over and about-to-begin work between the Issues A and Issue B contractors. Hopefully, all of Issue A work will be done by the end of this week and there should be no further conflicts in respect to those responsible.

As at the previous construction meeting, we went over the avoid-verbal-order (AVO) items from one through thirteen and discussed each in detail, clearing away the unresolved problems to the greatest extent possible as they were brought out. Some of the pertinent points discussed included:

- Location of built-in electrical items at block walls
- Configuration of masonry walls at downports
- Location of mechanical piping
- Resolution of elevations to which floor slabs are to be poured
- Tenant spaces not leased as yet

Apparently the project is now at a point where there are few, if any, major bottlenecks to a full scale production operation proceeding in the field. We will need to work rapidly to regain the present lag of some 37 working days over our current network and every assurance has been given that the work will proceed with minimal interruptions from here on.

Following the construction meeting I met with the Issue B contractor to continue diagramming flight stations and courses. Detailed plans were prepared of those elements and all seem to be in reasonably good order and within the schedule requirements except the concrete construction itself. These long reinforced concrete bridges are extremely complex and time consuming. We were able to resolve a sequence of construction but were not able at this meeting to decide on durations and interconnections between various sections of the work within the required schedule of time. Therefore, Harward & Karafillo, along with their sub contractor will restudy the sequence and we will meet again in the near future to resolve those problems. Meanwhile I shall send Mr. Kaula a copy of the interior network for the flight stations and courses, and will furnish Mr. Harward & Karafillo three copies for his use.

In work at the present time is final drafting on all elevations and the summary diagram for the interior finishing of the floors. I shall put into work early next week the drafting

Monitoring Report #8  
(Construction - Issue A and B)  
3-1-73  
Page three

RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER

for the concourses and flight stations and get as much of this in final form as I can prior to our next meeting on these areas.

Final diagramming of all interior finishes will be the next order of business and will be done as soon as the interior finish sequence can be established.

In summary, the project is still being delayed by problems that require quick turn-around decisions at the field and office levels. These are gradually being resolved but meanwhile, have in conjunction with other delay problems, delayed the job so it now lags approximately 37 working days behind early start/early finish dates projected in our Issue #6 network dated January 12, 1973.

As soon as the project is able to move full speed ahead, we shall complete the diagramming and network planning. In the interim we have completed our close-in planning work and these networks will be issued along with the summary interior finish networks to provide a guide to immediate future construction.

In conversation with Mr. Kania, he mentioned that the site work for the International Terminal, including the parking areas and roadways is due to be issued for proposals in May. If we assume one month for bidding purposes, this gives a contract letting date of somewhere in mid-June. All of this work must be completed by the onset of cold weather in 1973 since it involves much outdoor paving and work that is restrained by ground frost. Therefore, I urge that all involved expedite issue of working drawings for the site work that will reflect itself in an earlier proposing date.

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Dusen  
Mr. Ken Hafer  
Mr. Don Redmond  
Mr. Wally Van Nuck  
Mr. Sid Nordman

March 22, 1973

Subject: Monitoring Report #9 (Construction - Issue A and D)

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project: 72-64 - J

Date of Monitoring: March 14, 1973 (working day 52)

Actions taken:

- Completed diagramming of structure for flight stations and concourses
- Completed diagramming of stair tower structures
- Completed replanning of floor pour sequence
- Evaluated job progress

General summary

At our diagramming session on March 14, 1973 it was decided to rediagram all floor pours since the late start of construction of concrete decks made slightly larger pours possible than had been anticipated earlier. In addition, we checked all work done to date on the flight stations, concourses and stair towers. The plan sequence and durations were confirmed by the contractors involved. The next step is to redraft and recompute the updated logic sequence. It is my intent to issue the present data which includes detailed sequencing up to the close-in point, along with a summary diagram of the major interior areas to provide an interim working plan during the next four months. Concurrently, we will concentrate our efforts on a detail diagram of interior areas of the building.

It appears in our rediagramming efforts that due to the problems that have been encountered and documented previously, that there can be expected a delay to delivery of the total facility of from one to two months tending at this time closer to the two month delay period.



**Monitoring Report #9**  
**(Construction - Issue A and D)**  
**3-22-73**  
**Page two**

**RALPH J. STEPHENSON, P. E.**  
**CONSULTING ENGINEER**

There have been improvements in the overall job progress over the last two week period, and it appears that field decisions are forthcoming promptly, that close cooperation is being provided on all work on the job and that we now have a program of action in the field and office that is geared to expedite the construction operations. This is a noticeable improvement and all those participating should be complimented for their efforts.

We are approaching the point where working drawings for site work are being completed and I strongly suggest that we begin preliminary planning for installation of this site work since it will be started at a critical time of the year and be brought to completion sometime in early winter of 1973. Tight coordination of site work with the building construction so that there is minimal interference of the various contracting organizations will be an important factor in properly completing the jobs. In discussions with Mr. Kania, it was decided that I would contact the architect.

Because of the change to the pouring sequence, it will now be necessary to redraft certain of the completed documents. I shall put these in work just as quickly as possible and issue the diagram at an early date.

Looking ahead over the next two month period, it will be critical that we continue an aggressive floor pouring sequence and that we initiate masonry, spray-on and other close-in items, particularly precast concrete panels. These are essential to completion of close-in of the building.

So far as the pouring sequence is concerned, it is presently anticipated that pours will proceed from the lounge level to the high roof where the entire deck will be poured out beginning sometime late in March, probably about March 29, 1973 (working day 63). After pouring out the high roof, the pour sequence will move to the mezzanine and then back to the lounge area for completion. Meanwhile, roofing will proceed at the high roof area after the first pour or two is made there so an early close-in point can be established. Tentatively it appears that substantial completion of insulation and roofing at the high roof can be expected sometime in mid-June, about June 12th (working day 115). Because of selective compressions in the schedule, it presently appears that we may be able to get close-in targets within a month to month and a half later than originally anticipated. This is due basically to the loss in time over the last three month period.

**Monitoring Report #9  
(Construction - Issue A and D)  
3-22-73  
Page three**

**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

**All concerned have expressed a desire to pick up as much time as possible since maintaining winter operations during close-in is undesirable for all concerned.**

**Again, our work at this session pointed up the critical need to concentrate on flight stations and concourses. We have now an agreed-upon plan of work and it is expected that all contractors concerned with these areas have been made familiar with the requirements and will proceed on the basis of the current schedule.**

**Ralph J. Stephenson, P. E.**

**RJS/m**

**To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Deusen  
Mr. Ken Hafer  
Mr. Don Redmond  
Mr. Wally Van Nuck  
Mr. Sid Hardeman**

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

April 2, 1973

Subject: Monitoring Report #10 (Construction - Issue D)

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project: 72664 - F

Date of Monitoring: March 28, 1973 (working day 62)

Action Items:

- Inspected project
- Participated in design review of site work relative to construction

General Summary

As of March 28, 1973 (working day 62) the Issue D general contractor was getting ready to pour out pour #4. This was due to be poured by March 28, 1973 (working day 62) and was one day late. This new pour sequence is the one that resulted from our replanning work on March 14, 1973 and was reported in Monitoring Report #9. The sequence, according to that plan of work, is to go next to the low roof and then move to the high roof.

In a phone conversation with Mr. Hardeman today, April 2, 1973 (working day 66), he reported that work has started on the first high roof pour (#6) and it should be made either Wednesday or Thursday, April 4th or 5th. This will pull the project back on schedule so far as the high roof pours are concerned and if this pace can be kept up, the job should move well from here on.

We are now finishing redrafting of all of the network structural elements and I intend to issue this on a manually computed basis for iteration guidance while we complete all of the close-in and rough summary diagrams.

Relative to sub contract work, Mr. Hardeman said they are trying to expedite the exterior precast concrete shop drawings but apparently there have been some structural problems and they still have not been approved.

Construction of precast forms has proceeded, however, and as soon as the shop drawings can be freed up, the work will be cast. We are now approaching a point where erection of precast will be a major problem sequence. I suggest every possible effort be made to expedite this work. As has been mentioned previously, the restraint on precast will be spray-on fireproofing so this is another trade that must be given top priority attention so far as getting the contractor on the job and working. The weather has been excellent and it would be wise to consider moving this trade to the job just as quickly as possible.

Progress is still hampered by very muddy site conditions. Efforts are being made to overcome these but it is slowing deliveries to the project and giving all contractors access problems.

Mr. Hardeman said he expects sheet metal duct work to start arriving on the job sometime this week and this should give us a good jump on the rough mechanical work at each floor. It should be kept in mind that our sequence of work is planned to go from south to north with each level broken into three sections - the south third, the middle third and the north third. Floor sequences will be masonry first, then lounge level, then to the apron level. It will be critical that all contractors maintain the same geographic sequence so work can be expedited to the greatest extent possible.

Late in the afternoon of March 28, 1973 I met with several members of the Wayne County design staff and we discussed in detail the integration of site work with construction of the terminal. It is expected that plans for site work including parking lots, perimeter paving and other necessary exterior facilities will be completed on April 15th. They will be released for submission of proposals on May 15, 1973, with bids probably to be taken by June 1, 1973. This means a contract will be let somewhere between July 1, 1973 and July 15, 1973. It was decided that we should aim for major construction to be complete by December 1, 1973 with some horticulture work left for next year. However, it was pointed out that there are undoubtedly going to be some construction operations that will have to be extended past December 15, 1973 in order to be completed prior to completion of the terminal. We have assumed in our analysis of this work that the precast schedule will be maintained so far as the building construction is concerned.

Of prime importance is that the front of the building (not side) be totally cleared by July 1, 1973 so that work on the parking areas can begin. Of

**Page three**

particular importance is going to be the timing of site work with erection of the present canopy in front of the terminal and also the tie-in of flight station concourse work with the cross road elements underneath the concourse bridge.

There was discussion of the timing of construction of the perimeter roads at the north and west of the terminal. The north perimeter road follows roughly the location of the present temporary road and then swings south at the present parking area. It was assumed in the meeting that it would be desirable for this road to be put in as early as possible to provide a second means of access to the site and directly out to the apron area, consequently this section will be concentrated upon in early phases of the site work construction. Overall it does not appear there will be any major problems with coordination of the work, however, it is getting underway a little late in the construction season and it will be essential that every effort be extended to coordinate installation of the site work to insure its completion prior to the onset of heavy construction winter weather. We are presuming that the building terminal will be completed somewhere between February and April of 1974. As has been mentioned in other analyses, it appears now that there is a chance of the job running an additional two months because of delays that have been encountered in the early construction phases. In any event site work must be substantially completed by winter so the building can be used in 1973. This is the major condition under which site work contracts should be let. In closing at the meeting it was decided that a set of the layout and location drawings would be submitted to the general contractor for Issue D work, reviewed with the office and field managers of the organization, Mr. Hardeman and Mr. Van Nuck, to see if there were any problems that could be visualized with the present plan of site work installation.

In overall summary, the project appears to be moving along more smoothly than it has over the past three or four months. Floor plans are beginning to sequence out. Deliveries of materials are being expedited and aside from some rather obvious problems such as spray-on fireproofing, precast concrete and start of interior rough work on each level, the job is well underway. It is important to watch construction of the flight stations and concourse structures because they, as has been pointed out many times, continue to be very critical to the job.

**RJS/m**

**Ralph J. Stephenson, P.E.**

**For Messrs. Samuels, Kasia, Van Dusen,  
Husfeld, Redmond, Van Nuck, Hardeman**

April 12, 1973

Subject: Monitoring Report #11 (Construction - Issue B)  
  
New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project: 72164 - F

Date of Monitoring: April 10, 1973 (working day 71)

Actions Taken:

- Inspected project
- Reviewed project progress with Mr. Warden
- Participated in construction conference

General Summary

As of April 10, 1973 (working day 71) the project lags the Issue 1 network diagram for Issue B work dated March 20, 1973 by 10 to 15 working days. This network from which the monitoring is based consists of the close-in diagram and summary networks of all finish floors. It projects with some delays included a completion date established as of March 20, 1973 of about one early or middle part of March 1974. The detailed logic for all floors has not been as yet prepared due to the need to first develop close-in diagram for the main building, and the flight station, study tower, elevator tower and concourse structure plan of work for each of the flight station areas. These have now been diagrammed and approved and are being used as the base criteria from which to make evaluations.

The lag is in two critical areas. First, delivery of precast which we had projected at May 1, 1973 (working day 86). There is some question as to whether exterior precast will be able to start on this date or not. Early conversations during the day indicated there might be some delay, however, at the construction meeting the representative of the precast fabricator and vendor said that there is a good chance they can meet the May 1, 1973 date. If so, this will be a major assist to getting this project underway so far as close-in is concerned.

Another critical element is spray-on fireproofing. Spray-on work was due to start at the east elevation south end up to elevation 666' on April 9, 1975 (working day 70). The general contractor said that it is now planned to start on April 16, 1975 (working day 75). If spray-on work can start April 16, 1975, it should be able to get out ahead of precast erection, shoring and hooping those two trades underway is absolutely essential to continuing progress on the job since they unlock erection of masonry and steel-in by all other items.

Another critical area that is currently behind is construction of the north concourse flight section entry towers, and elevator towers. Presently this work lags by about 10 - 15 working days. Its most serious implication is in the possible delay of start of construction of the concourse core beams at the north end. The concourse structure makes these sections extremely critical elements of the entire project. Any delay now forces their construction further into cold weather next winter. Therefore, it is to everyone's advantage to expedite and get under way as quickly as possible these long concourse structures, both at the north and south ends.

Thus, the three most critical items to unlock and move ahead now are spray-on fireproofing at the exterior of the building on the east elevation, south end, precast on the exterior at the east elevation, south end, and construction of the flight section service towers and concourse structures at the north concourse area.

Interior work is just now starting and from conversations at the construction meeting, it appears that sheet metal is well along in fabrication and the fabricator is very diligent of getting on the job. However, it is critical that the erector avoid double handling of his material and therefore, he will have to delay moving onto the job in full force until he can gain better access at the west elevation. This west elevation is tied up presently due to the very wet weather we have had over the last three days. I urge this matter of access be solved immediately, not only for the mechanical contractor but for all trades. Access to the building continues to be a delaying factor and must be somehow resolved so that free access is available for all those who must get to the structure.

Floor pours inside the building have been delayed generally due to late material deliveries and bad construction weather. However, Harward and Kurekille point out that it is their intent to begin an aggressive program of floor construction as soon as the weather

weeks, presumably the middle or end of this week and to continue on through with an accelerated pouring schedule which should make or better the current scheduled work.

One of the major goals presently is to get the entire roof deck cast so that insulation and roofing can be placed to get the building substantially in the dry so far as the horizontal protection is concerned. There is some question about the amount of curing time before roofing can be applied. I suggest this matter be settled quickly so no delay to roofing be incurred.

At the construction meeting I issued sheets 3, 4, 5, 6 and 7 of the current issue 1 network plan dated March 30, 1973. This network shows all of the floor pours, construction of the study towers connected to the building, shear walls, piers and close-in of the exterior of the structure including precast, masonry, spray-on and roofing. In addition, on sheets 6 and 7 are shown summary diagrams of all interior construction moving from the mezzanine level to the lounge level to the open level.

In the summary diagrams major work operations are grouped by rough mechanical and electrical interior work, rough architectural interior work, finish interior work and systems work. Times have been assigned to these major groupings that currently appear reasonable and it was requested that each person concerned over the next two week period review the summary diagrams in detail to determine if the times assigned and the logic sequence are reasonable. It is the intent to soon move into the detailed planning of each floor section. However, in the interim to establish a target end date, we will have to use the summary diagrams as a measure.

Presently with the current lag over the issue 1 network, it still appears we should consider the project will be from 1 1/2 to 2 months later than our target dates of February 15, 1974 (working day 159). For the purposes of this Issue 1 network we are going to tentatively hold to a completion of March 4, 1974 (working day 169) until we receive additional commitments from spray-on and precast trades.

After the main construction meeting there was a discussion of joint sequences on the flight station and concrete work. The techniques of setting formwork, splicing bars and casting concrete were worked out in this second meeting. It will be absolutely critical that close cooperation of field, office and design forces be maintained constantly to assure proper construction. The flight station and concrete are very complicated structures. Maintenance of proper architectural surfaces on closely controlled concrete will be important and procedures should be set up so that proper controls can be established and maintained.



Monitoring Report #11  
(Construction - Issue D)  
4-18-73  
Page four

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

In summary, the project still is experiencing severe access problems and several key trades are still potential bottlenecks. Currently the tasks to watch involve flight stations and concourse work, exterior spray-on fireproofing and exterior precast concrete. All of these unlock critical construction operations that must be accomplished before major work can start inside the building on finish trades. Of importance also is developing proper access to the building so overhead trades can start at the mezzanine levels, particularly sheet metal.

It is expected that mechanical room floors will be poured out in the very near future which should give the mechanical and electrical contractor three major spaces in which to work.

The next two week period will be critical since it is during this time that many of the floor and roof pours will be made. The next meeting should be a major evaluation point and we will plan to cover all elements of the program in detail at that time.

Ralph J. Stephenson, P.E.

RJS/s

To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Dusen  
Mr. Ken Mafer  
Mr. Don Redmond  
Mr. Wally Van Nuck  
Mr. Sid Hardeman

April 26, 1973

**Subject: Monitoring Report #12 (Construction)**

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

**Project:** 72164 - F

**Date of Monitoring:** April 24, 1973 (working day 81)

**Actions taken:**

- Inspected project
- Reviewed project progress with Mr. Van Nuck
- Participated in construction conference

**General Summary**

As of April 24, 1973 (working day 81), the project lags the Issue 1 network diagram for Issue D dated March 20, 1973 by 15 - 20 working days. The lag is primarily in construction of the towers flight station and concourse structure at the north end. A direct measure of the lag relates to the start of work on the concourse core beams. These were due to begin on May 3, 1973 (working day 88). However, there is a major delay in detailing, fabrication and delivery of the reinforcing steel for this structure and also construction of necessary stair tower and elevator tower work has been restrained by very slow detailing, fabrication and delivery of resteel for these structures.

It has been emphasized in the past few weeks that the elevator towers, stair towers and concourse structures, along with the flight stations, are vital parts of this entire complex. Without them it would be difficult, if not impossible, to operate the facility. They are long construction time items due to their complexity and it is absolutely essential if this project is to maintain pace with the schedule we have established that work progress at the concourses and towers be improved immediately. A major discussion of this matter was a subject at the construction meeting and everyone is well aware of the need to concentrate efforts on these areas.

**Monitoring Report #12  
(Construction)  
4-26-73  
Page two**

**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

**Another lagging area that is critical is close-in of the total main building. In order for precast erection to start and following that, meaningful masonry erection, spray-on at critical areas that restrain the precast must be completed. This spray-on work as yet has not started and apparently is presently restrained by the erection of miscellaneous iron to which the precast attaches. I suggest an immediate study of this problem be made and field obstacles to start of spray-on be solved immediately.**

**Representatives of the spray-on contractor were at the meeting and stated they were able to begin work immediately. Apparently there is no hangup on material delivery. Some grading will have to be done to allow access to the east side but generally, it appears that work can begin as soon as the structure is ready. The structural steel erector still has some miscellaneous work to complete. This work too should be gotten out of the way so there is clear sailing for the spray-on and precast people.**

**So far as the remainder of the project is concerned, floor pours and roof pours are moving well and presently are meeting or are slightly behind early start/early finish dates. Approximately 60% of the roof has been poured out as of April 24, 1973 and work is continuing on the floor decks. Continuing to be a major problem and restraining floor deck work is underfloor electrical duct. This duct is now due on the job May 7, 1973 (working day 90) and reassurance has been given that it will reach the job then. Shear walls have also proven to be very troublesome since the detail of construction at the joints with the floors is still to be approved.**

**Interior rough mechanical and electrical work has started and mechanical work particularly has moved extremely well. Sheet metal is being erected and if the present rate of progress can be maintained, the job should move well in accordance with our present schedule. The electrical and mechanical contractor responded to the request at the previous meeting regarding a check of the network by agreeing that the times assigned seemed reasonable and the logic of work appeared appropriate.**

**We shall start our detail diagramming of each of the interior areas very shortly to insure that we have adequate monitoring documents**

**Monitoring Report #12  
(Construction)  
4-26-73  
Page three**

**RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER**

for the remainder of the project. Meanwhile all involved have approved the Issue #1 network diagram, sheets 3, 4, 5, 6 and 7 and these are presently the official planning documents by which we will proceed.

Taking into account our present lag, it appears that we should consider a tentative completion date as of job status today of about the end of March, say March 29 (working day 319) as a realistic target. However, there still is enough uncertainty about construction of the stair towers and concourse structures that I recommend we allow an additional period of time before making official statements regarding the completion target date. We shall work to the above goals. There still is considerable agreement to be reached on the type, location and quality of concrete finishes. This matter was to be discussed at a special meeting Tuesday, April 24, 1973. Also, we should develop early adequate rain conductor capacity for water to be drained from the roof once insulation and roofing have been applied.

The mechanical contractor has requested that he be allowed to roll his heavy equipment for mechanical equipment rooms across the concrete slab at the roof prior to roofing being laid. Since there is some time yet before the mechanical equipment room floor slabs can be poured, waterproofed and equipment bases placed, the timing on this equipment placement should be worked out in the field. Apparently the equipment is either on the job or immediately available so it should not hold up work once the mechanical messianism are ready to receive them.

Access to the site is now good and it appears that most problems have been worked out for the time being.

In summary, the project continues to be plagued by serious problems of progress at the flight station, stair towers, elevator tower and concourse structure at the north end. In addition, there is still some delay potential in starting spray-on fireproofing and precast erection. These two major areas of work are vital to the job and must be given very careful attention so the project can get into a pattern of construction that will be reasonably close to our present target schedule.

Other areas of the project are moving well and the job progress, with the exception of the two items mentioned above, has shown a marked improvement over the past month and a half.

**Ralph J. Stephenson, P.E.**

**RJS/m**

**To: Messrs. Samuels, Kania, Van Deusen, Hafer, Redmond, Van Nuck,  
Hardeman**

May 4, 1973

**Subject:**       **Monitoring Report #13**  
  
                  **New International Terminal**  
                  **Metropolitan Airport**  
                  **Detroit, Michigan**

**Project:**       **72:64 - F**

**Date of Monitoring:** May 1, 1973 (working day 86)

**Actions taken:**

- Began preparing detail interior diagrams
- Reviewed job progress with Mr. Van Nuck
- Evaluated job progress

**General Summary**

As of May 1, 1973 (working day 86), the work shows as moving extremely well in some areas, while other portions of the project remain behind and critical. The entire roof deck has been poured out and major mechanical and electrical work is moving very well in the south third of the mezzanine level. Exterior masonry has been moved to the mezzanine level from the apron level. Mechanical equipment floors are being readied for a pour and should be completed by the end of this week. Membrane waterproofing will be applied and the topping poured on the mechanical mezzanines, according to our present plan of work, by May 17, 1973 (working day 98). After a curing period, it will be possible to start setting mechanical and electrical equipment at the mechanical mezzanine floors by June 13, 1973 (working day 116).

In the interim it is hoped to obtain approvals on roofing materials so insulation and roofing on the high level roof deck can be started as soon as possible. At present there is a very long delivery on roof insulation and the contractor is experiencing difficulties in obtaining adequate commitments from his suppliers. It will be important to obtain this roof since at the present pace, interior finish work will be ready to begin sometime within the next 8 to 10 weeks.

Electrical underfloor duct is due on the job May 7, 1973 and it is expected that every attention will be given the south, middle and north sectors of the mezzanine, followed closely by the lounge level floors. Presently lack of a concrete floor is not restraining overhead sheet metal, piping and electrical work. However, masonry in the respective floor sections cannot start until all floor areas are cast in place. We will be ready for start of masonry at the south third of the mezzanine very shortly and this points up the critical nature of completing floor pours where electrical floor duct was not placed. It is important to keep in mind our interior rough and finish work sequence is still from south to north, first at the mezzanine level, then at the lounge level, moving down and out at the apron level. This sequence was again confirmed in our meeting today with Mr. Van Nuch, Mr. Hardeman and the major mechanical and electrical sub contractors.

Two areas causing some serious local problems are the shear walls at the middle of the building and the spandrels at the second floor west elevation. There are some sequencing and approval problems that must be solved before these can be put in work. Apparently the spandrel concrete has been resolved but shear wall construction still remains a problem. Since both of these are important to unimpeded progress on the project, I suggest they be given office and field attention.

The spray-on contractor has moved equipment onto the job site although no work has yet started. It is intended that there will be adequate frames installed on the east elevation so spray-on operations can begin by May 7, 1973 (working day 96).

Present materials for the east elevation are due on the job May 7, 1973 and erection is expected to begin just as soon as spray-on work moves far enough ahead for proper erection sequencing to be followed. This is a critical set of operations and must be watched carefully to insure that no major lags develop.

In our current plan of work exterior precast was due to start on May 1, 1973 (working day 86).

Start-up of precast can be measured against this date and will give a direct indication of the close-in lag on the building since the task is critical.

An item that will be needed in the not too far distant future will be the skylights at both the high and low roofs. These generally are long lead

Monitoring Report #13  
Metropolitan Airport  
5-4-73  
Page three

time items and I suggest the general contractor make certain they are under contract and deliveries have been scheduled. Skylights cover large areas at critical roof points; thus, it would be wise to have these in place for permanent weather protection as soon as possible.

Flight station and concourse work at the north still lags badly and although reinforcing steel problems are apparently being resolved by crash efforts on everyone's part, the delays here are extremely serious. The critical date to measure from is the start of the concourse core beam to the lounge level. This structure was due to begin in the field on May 3, 1973 (working day 88). However, it cannot begin until the third lift of elevator tower #5 has been poured, cured and stripped. Presently forming and setting of resteel for the second lift of this elevator tower #5 is in work. The lag in the core beam structure ranges from 15 - 20 working days.

Mr. Van Nuck, Mr. Kania and I discussed the concourse problem in detail and it is the desire of everyone to pick up as much time as possible at this area when resteel arrives on the job. Until we do resolve our fabrication problems and get adequate reinforcing rods to proceed with the work, further delays will continue.

All contractors now recognize the critical nature of this set of structures and are prepared to implement a heavy program of concentrated field effort when adequate proper resteel arrives on the job. Progress at the flight station and concourse area over the next three weeks should be watched carefully as an indicator of how future work there will go.

At our diagramming session today we received excellent information and cooperation from the general, mechanical and electrical sub contractors. We were able to complete detail diagrams of the south and middle third of the mezzanine levels. We also began planning the north mezzanine level, stopping our work there for all contractors to evaluate the overall plan of work and develop correct and accurate information for the lounge and apron levels during the next two to three week period.

A final date evaluation will be deferred until we have had an opportunity to complete the detailed work schedule. However, my comments in Monitoring Report #12 on page 3, paragraph two, still generally apply. This is particularly so due to continuing delays in construction of the concourse and flight station structures. Overall, I would say that we

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Monitoring Report #13  
Metropolitan Airport  
5-4-73  
Page four

are about at a point on the project where work should begin to move smoothly, without excessive starts and stops due to administrative and fabrication delays. Once this work continuity is established, I anticipate that activities should move extremely well on the project.

Ralph J. Stephenson, P.E.

RJS  
m

To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Deusen  
Mr. Ken Hafer  
Mr. Wally Van Nuck  
Mr. Sid Hardeman



May 30, 1973

**Subject: Monitoring Report #14**

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

**Project: 72164 - F**

**Date of Monitoring: May 22, 1973 (working day 101)**

**Actions taken:**

- Inspected project
- Participated in construction conference
- Evaluated job progress
- Color coded networks

**General Summary**

As of May 22, 1973 rough work at the mezzanine level, primarily sheet metal, mechanical piping and electrical work, is moving very well and is generally on schedule. Floor pours have also moved extremely well and it is expected that all concrete decks will be poured out by the middle of the week of May 29th, or slightly later. Presently floor pours are not delaying any major trades of a critical nature.

The major problem on the project continues to be start of precast. Spray-on work has generally moved well and it is now time for precast erection to begin in earnest. We had originally scheduled precast concrete panels to start in Issue #1 dated March 20, 1973 on May 1, 1973 (working day 86). As of Tuesday, May 22, 1973 (working day 101) they had not as yet begun. In a brief inspection of the project on Friday, May 25, 1973 (working day 104) they still had not begun. This gives them a current lag as of May 25, 1973 of approximately 18 working days. This lag is serious since panels restrain critical close-in items that will prevent interior finish work from beginning at the various floor levels. It should be emphasized that present schedules show interior finish work is due to begin at the mezzanine level on approximately July 26, 1973 (working day 146). These finish trades are generally represented by soft work that must be protected from weather.

Monitoring Report #14  
Metropolitan Airport  
5-30-73  
Page two

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Extensive conferences over the past few weeks and evaluation of job progress have indicated that the project has been running between one and two months behind the originally projected end dates of the job. I have reviewed with the contractor the new projected end dates he felt to be achievable within the delays that have been incurred on the project to date. These revised dates are contained in a letter to the Wayne County Road Commission dated May 23, 1973 from Mr. Samuels of Markward & Karafilis. The new dates appear to be reasonable of achievement in light of present progress and I suggest they be evaluated now in respect to the needs of the Road Commission. This monitoring report is projected on the finish date of March 1, 1974 as compared to the revised target suggested by the contractor of April 1, 1974 (working day 319).

Still of major concern is construction of the flight stations and concourses. This work continues to move very slowly and delays are still being caused by detailing problems, resteel deliveries and other such miscellaneous reasons. Some of the problems are becoming less acute but nevertheless the current lag on flight station work is serious enough so heavy efforts must be made to start picking this time up. The critical items on the flight stations and concourses are all construction elements that restrain the start of the core beams at the concourses. The north core beam was due to start at an early date of May 3, 1973 (working day 88). There is still some major delay to its start due to the need to have the north elevator tower through the third lift. However, the general contractor said that once resteel problems have been cleared, extensive efforts will be made to recapture lost time on the job.

In summary, the project continues to move fairly well insofar as the main building is concerned. Some delays have been incurred in the start of close-in with precast but these lags could be recaptured if work is expedited as has been shown possible in past performances. The most critical areas are still the flight stations and concourse structures which must be given continuing careful attention from here on.

At the construction meeting a discussion was held of the integration of site work with the general contract work on the terminal. It was communicated to the International Terminal building team that site work would probably begin at the east of the terminal on the parking lot and some roadways by July 2, 1973 (working day 129). The work will avoid the east elevation of the building. Also, the lots at the flight concourses will be held for later construction so as not to delay installation of the flight stations and concourse structures.

**Monitoring Report #14  
Metropolitan Airport  
5-30-73  
Page three**

**RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER**

**Overall I recommend that all major efforts possible be bent now toward closing in the main building and getting the area ready for finish work. Progress has been exceptionally good over the last two weeks on the interior and this has helped considerably to keep the job within the range of the currently projected schedule.**

**Ralph J. Stephenson, P.E.**

**RJS/m**

**To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Dusen  
Mr. Ken Hafer  
Mr. Wally Van Nuck**

June 13, 1973

**Subject: Monitoring Report #13**

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

**Project: 72164 - A**

**Date of Monitoring: June 5, 1973 (working day 110)**

**Actions taken:**

- Inspected project
- Participated in construction conference
- Evaluated job progress

**General Summary**

As of June 5, 1973 (working day 110) the project lags on work at flight stations and concourse areas by approximately 29 working days and on main building work by approximately 20 working days. The lag at the flight stations is fundamentally in the start of the concourse core beam to the lounge level. This was due to start at the north end of the project on May 3, 1973 (working day 88). Currently it is projected to start about June 14, 1973 (working day 117). This accounts directly for the 29 day lag.

Building work is behind in close-in with precast just getting underway at the south of the east elevation. The close-in lag could possibly be regained to some extent. However, the lag at the flight stations and concourses will be increasingly difficult to make up. I urge that every effort possible be made to expedite work on the concourses and flight stations since if the lag is not regained, some of the difficult forming work for these concrete structures will be forced into late fall and early winter weather with the usual cold weather problems.

The 20 day lag in building close-in will ultimately restrain start of interior finish trades in any major continuity sequence. However, work on some close-in trades has moved better than anticipated indicating some pickup in time might be possible.

A major element affecting the terminal work is parking lot and parking construction, to start at the east side of the terminal sometime close after July 1, 1973. This work will have to be carried out in conjunction and close coordination with terminal work since it is one of the necessary facilities for operation of the International Terminal.

As far as interior work at the terminal is concerned, mechanical and electrical installation at the mezzanine and lounge levels is moving relatively well. Equipment at the mechanical rooms is due to be set on June 14, 1973 and the roof should be moving on the job as soon as weather permits. Presently there is about 2/3 of the high roof material on hand. There should be no delay on roofing and it is entirely possible that some of the installation time originally projected might be shortened.

A matter discussed in some detail at the construction meeting was selection of colors for the architectural elements of the project. Apparently an interior consultant had not been as yet selected and the matter of color selection for such items as ceramic tile, elevator cabs, toilet partitions, slat ceilings, bar ceilings, carpet and wood finishes is getting critical. I suggest a decision be made soon on these matters and if there is to be further delay, that some method be found now of allowing color selections in key integrally installed areas such as for ceramic tile to be made early. The architect and owner agreed that they will discuss this matter.

Another item of concern is power requirements for the escalator. There is some confusion about the amount of power to be provided, as compared to the power required for the motor drives. This matter is to be investigated.

In summary, the project still lags from 20 to 25 working days, the longer lag being in the flight stairs and concourse area work. The shorter lag is in close-in of the building, primarily process erection. These lags are measured from a presently projected completion date of March 4, 1974 (working day 299), as projected in the network issue #1 dated March 20, 1973.

Ralph J. Stephenson, P.E.

RJS/m

To: Messrs. Samuels, Kania, Van Dusen  
Major, Van Hook, Richmond

June 27, 1973

**Subject: Monitoring Report #16**

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

**Project: 72:64 - 1**

**Date of Monitoring: June 19, 1973 (working day 120)**

**Actions taken:**

- Inspected project
- Participated in construction conference
- Evaluated job progress

**General Summary**

Currently the job lags on work at flight stations and concourse areas by approximately 30 working days and on main building work by approximately 20 working days. Interior work including sheet metal, plumbing and rough electrical currently appears to be well in line with early start/late start dates shown on Issue #1 dated March 21, 1973.

The major problem at the flight stations and concourse areas remains construction of the core beam which is the main structural support for the concourses into the main terminal. These continue to be very troublesome areas and it is apparent that no time is being picked up in the construction of these facilities. The projected date shown in Issue #1 brings these into late fall and early winter. Therefore, the current lag pushes construction of these facilities far into cold weather. I cannot over-emphasize, as has been repeatedly brought out in these reports, the importance of improving performance at both the north and south flight station concourse structures. This remains an extremely critical part of the project and continuing, increasing efforts must be exerted to bring these closer in line with the current plan of work.

The major lag at the main terminal building is still in close-in. This lag will undoubtedly be increased since precast concrete members for the east elevation have been brought onto the site

- Meeting Report #16 ok -  
R. Oster for file only

without finishing at the yard. This proved unsatisfactory. P.E.  
Wayne County and erection was stopped Tuesday, June 19, 1973  
(working day 150) until a mutually acceptable resolution to  
the problem was agreed upon.

Another problem that has presented itself is the current yard  
workers strike which affects delivery of masonry units and  
related materials such as mortar, accessories and the like.  
There is some indication that this strike may be over quickly  
but any stoppage or long duration will adversely affect the  
job progress.

There has been some difficulty in obtaining approval for  
steelwork panels and it has been suggested that the contractor  
prepare a large panel and place it in a location near where  
finish panels will be hung. This is another matter that should  
be worked on quickly as approvals can be gained for the finish  
on these critical interior finish elements.

Freight elevator drawings have been released and fabrication  
should be in work immediately. It was announced at the meeting  
that the Redstone office will handle the color selection and  
by the end of the week of June 23th, it is expected that most  
major interior finishes will have been selected in respect to  
color.

The canopy at the east elevation is scheduled to arrive on the  
job July 1st, 1973 (working day 136). This must be conditioned  
on the acceptance of main building progress with and the date  
will be evaluated at a point when decisions have been made  
regarding the finish on current progress. A conflict that  
could cause some schedule difficulties is the potential inter-  
ference at the east elevation between masonry scaffolding and  
the crane for erecting the high precast elements. This is a  
field related problem and will be worked out by the respective  
managers.

In summary, the project still lags between 20 and 30 working  
days over the target finish date established in our Issue #1  
network diagram of March 2, 1974. There is little, if any,  
evidence that this time is being regained.

Working is moving relatively well at the present time and it  
is possible that some areas that will be closed in early can  
take interior finish trades such as painting and items which

**Monitoring Report #16  
Metropolitan Airport  
6-27-73  
Page Three**

**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

must be protected from the weather at our anticipated date in Issue #1. However, we must clear away such problems as the finishes on resinous panels and precast panels and of course, continually cope with the possibility of work stoppages such as now have been imposed upon the job by the masonry yard workers.

On the positive side, general coordination and cooperation appears to be improving and if this general spirit can continue to prevail, the problems that exist certainly will be resolved as quickly as possible. The project is now at a point where I have requested a meeting with the major sub contractors to complete all interior finish diagrams. This meeting is to be at 11 A.M. - 12 Noon and 1:15 on for the remainder of the afternoon on Tuesday, July 3, 1973. Mr. Jay Richmond is contacting all concerned parties to insure their attendance.

**Ralph J. Stephenson, P.E.**

**RJS/m**

**To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Dusen  
Mr. Ken Hafer  
Mr. Vally Van Nuck  
  
Mr. Jay Richmond**



July 9, 1973

Subject: Monitoring Report #17

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project: 72:64 - I

Date of Monitoring: July 3, 1973 (working day 130)

Actions taken:

- Completed rough diagramming of all interior finish work for main building
- Reviewed general progress with major sub contractors

General Summary

This session was devoted to a detailed review of the interior networks for the nine major sections of the building (the south, central and north sectors of the mezzanine, lounge and apron levels). The major purpose of this session was to cast into final form current projected schedules for each sector of the building in accordance with latest available information. Logic was confirmed for all contractors represented at the meeting, and for those who did not have representatives, assumptions were made that currently appear reasonable and appropriate. This revised network will be drafted into final form and concurrently the rough network will be submitted to the general contractor, the owner and the architect/engineer for review. I shall provide five sets of sheets A through F to the general contractor for his use in reviewing the job with his major suppliers and sub contractors.

Major elements to be watched carefully in finish work continue to be special trades such as resinous panels, special ceilings and interior colors and finishes. The architect/engineer is presently authorized to select major area colors where long lead time decisions are required. However, it is understood that as yet no interior design contract has been let and this matter continues to be a concern to all on the project. I recommend the interior design matter be resolved as quickly as feasible.

Monitoring Report #17  
Metropolitan Airport  
7-9-73  
Page two

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Presently the difficulties on the job remain substantially as they have been over the past several weeks. First is progress toward close-in. There continues discussion about the precast finish quality, although presently precast erection is continuing in the field. This matter must be settled immediately in order that precast erection and the trades that follow erection can proceed without delay. Skylight deliveries have been set and appear to be currently satisfactory although glass delivery will be deferred until late summer. Every effort should be made to improve glass deliveries.

Roofing on the project main roof will be substantially complete by Friday, July 6th and the skylight installation at the high roof can proceed immediately after that.

The strike of the yard workers and suppliers of masonry materials has still not been settled although the job continues on a day to day basis.

Flight station and concourse work is still a major problem although the concrete contractor has committed now to a firm set of dates, as outlined in his memo of July 2, 1973 which brings him to completion of major work he is involved with by November 15, 1973 (working day 226). Our next planning work will involve a re-diagramming of the flight stations and concourses, along with finishes needed to bring this section of the job to occupancy.

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Dusen  
Mr. Ken Hafer  
Mr. Wally Van Nuck  
Mr. Jay Richmond

• CRITICAL PATH PLANNING

• LAND PLANNING

• MANAGEMENT CONSULTING

• PLANT LOCATION

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

15064 WARWICK ROAD  
DETROIT, MICHIGAN 48228  
PHONE 273-5026

July 9, 1973

Mr. Bernard Colton  
Louis G. Redstone Associates, Inc.  
10811 Puritan  
Detroit, Michigan 48238

Re: Revised Completion Dates  
International Terminal  
Metropolitan Airport

Dear Mr. Colton:

Over the past few weeks I have subjected the new International Terminal construction program to a careful analysis regarding establishment of new firm completion dates which can be recommended to the Wayne County Commissioners.

In Mr. Richard Samuels' (of Markward and Karafilis) letter of May 23, 1973 to the Commission, a revised, staggered occupancy was outlined that would substitute for the original specified dates. It is with these revised dates that I have made my analysis in close cooperation with the staff of the Wayne County airport group, and contractors on the job.

It is my recommendation at this time that we accept Mr. Samuels' suggestions and set the target date for the total terminal facility to be available for substantial occupancy on April 1, 1974 in lieu of the original date of February 15, 1974. Mr. Samuels has suggested certain interim dates by which areas, as originally specified, will also become available. However, I recommend that these not be placed formally before the Commission at this time due to the fact that the need for space occupancy on

Mr. Bernard Colton  
Page two

a staggered basis may change as we move toward the occupancy dates. For instance, it is my understanding there still has been no lease negotiated with a food and drink service. Since this is one of the major interim occupancy areas, it is problematical when we might have enough information so that such space can be finished and occupied by a tenant. We should, however, keep fully informed about leased space arrangements and at the earliest date specific information is available, we can at that time set firm interim occupancy points.

I also would like to point out one further qualification on a finish date. Work at flight station and concourse elements of the project continues to move very slowly at present although firm commitments have now been made by the contractors involved to expedite this work and bring completion of the rough structure back in line with our Issue #1 schedule. If this can be accomplished, it is possible the entire facility including all flight stations will be available. However, I have some reservations at present whether, despite commitments, this can be accomplished.

As with interim occupancy spaces, I shall keep close watch on the flight station and concourse work so as to continually evaluate the current status of that work. At some point, probably in early August, I shall be able to make a much better prediction as to whether all flight stations will be available by April 1, 1974 or not.

In summary, I recommend that we accept Mr. R. Samuels' suggestions as outlined in his letter of May 23, 1973 to the County Commissioners, attention Mr. William Curtis, and re-establish the completion date for the main terminal and all facilities related to it under their contract on April 1, 1974. I further suggest that we accept Mr. Samuels' commitment on the interim occupancy points but that we do not make these a formal revision to the contract at present.

If there is any other information that you require, please don't hesitate to get in touch with me.



Ralph J. Stephenson, P.E.

RJS

m

July 13, 1973

Subject: Monitoring Report #18

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project: 72:64 - F

Date of Monitoring: July 11, 1973 (working day 135)

Actions taken:

- Inspected project
- Evaluated job progress
- Conferred briefly with Mr. Van Nuck, job superintendent

Monitored from Issue P9 dated July 3, 1973

General Summary

As of July 11, 1973 (working day 135) we are monitoring the project from network Issue P9 which was prepared at a meeting of major contractors on July 3, 1973 (working day 130). This diagram has been generally agreed to and was submitted to Markward & Karafilis July 3, 1973 in five copies for distribution to all contractors. I urge that careful attention be given its content and that all major sub contractors be provided copies. It is imperative they be able to review the current plan of action so that their concurrence and full cooperation can be assured.

Taking each area individually, we find the following as of July 11, 1973.

Close-in

Because of the nature of the project, close-in of spaces is to be achieved on a successive basis. Presently we are anticipating the close-in point for start of interior finish work at the mezzanine is August 1, 1973 (working day 130). It appears presently that this weather-tight date can be met since roofing is installed at the high roof and at this level much of the enclosing masonry has been erected.

A review of camera on total close-in remains erection of precast column and truss covers which are considerably behind the original schedule. Also, it should be noted that temporary closures of the skylights will be necessary due to late deliveries on glass.

South Mezzanine (SM)

All rough work here is currently meeting early start/early finish dates. Masonry has also been given a good start in this area and it appears presently that the target critical date of August 1, 1973 (working day 150) can be met for start of GYP board partitions. GYP board on columns and plaster surfaces. Another important item in this area is installation of resilient column and truss covers. This work is due to start on July 26, 1973 (working day 146) and is conditional upon approval of the resilient samples. Careful attention must be paid this matter so no delays are encountered.

Center Mezzanine (CM)

Spray-on work and sheet metal work are substantially complete with above floor mechanical plying and electrical feeders moving well. This area follows in sequence the south mezzanine.

North Mezzanine (NM)

Sheet metal work and other above floor mechanical and electrical installations are well in line with early start/early finish dates. This area is on schedule currently.

South Lounge (SL)

Sheet metal work is moving very well in this area and all spray-on is substantially complete. The area is meeting early start/early finish dates.

Central Lounge (CL)

Sheet metal work is in good condition, as is spray-on fireproofing. Work is currently meeting early start/early finish dates.

North Lounge (NL)

Spray-on fireproofing has been substantially completed and the area is currently meeting early start/early finish dates.

South Lounge (SA)

Some mechanical work has begun but the major activity is now concrete slabs on grade. The east half of the south half slab has been partially ready for pouring and it is expected that a

Monitoring Report #18  
Metropolitan Airport  
7-13-73  
Page Three

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

pour will be made within the next few days. This pour sequence is due to be completed for the rough slab on July 31, 1973 with the topping slab due to be complete by August 9, 1973 (working day 136). The area is currently meeting early start/early finish dates.

#### Central Atrium (CA)

Work has started here on the installation of the stairways at the mezzanine and generally work is meeting early start/early finish dates. Installation of the freight elevator should be watched carefully since this is an early delivery item.

#### North Atrium (NA)

Work has not yet started on major above floor work and slab on grade preparation.

#### Flight Stations (FS)

The north and south flight stations and concourses still are a source of concern. However, work has picked up considerably in these areas and within the next month it will be possible to more firmly establish whether the current lag can be picked up by tight dovetailing of work and maintenance of concurrent operations in other sections. We are now preparing a revised schedule for construction of these flight stations and concourses and this will be reviewed with field forces in the near future. The slab on grade at the north flight station has been poured, and the core beam at the north has been started although work is moving slowly on this structure.

#### General Summary

Overall the project continues to lag at flight stations and concourses. However, main building work is beginning to show excellent sequencing and measured against the end date of our Issue P9 dated July 3, 1973, the main building is currently meeting early start/early finish dates.

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Richard Samuels, Mr. Robert Kanis,  
Mr. Charles Van Dusen, Mr. Ken Hafer,  
Mr. Wally Van Hook, Mr. Jay Richmond

*Rec'd. Hqs. Sept.  
Encl. and 1*

August 2, 1973

**Subject:** Monitoring Report #14

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

**Project:** 72:64 - F

**Date of Monitoring:** July 31, 1973 (working day 149)

**Actions taken:**

- Inspected project
- Reviewed job progress with Mr. Van Nuck, job superintendent
- Evaluated job progress
- Participated in construction conference

Monitored from Issue P9 dated July 3, 1973

**General Summary**

As of July 31, 1973 (working day 149) the project is moving relatively well at the main building areas with some slight problems due to incomplete close-in. However, the project continues to fall further behind at the flight stations and concourses. This flight station and concourse work is now in critical condition and unless immediate steps are taken to improve the performance, the problems that will be faced as cold weather arrives will be such that completion by our present target dates may be difficult or impossible to achieve.

At this point we have distributed the Issue P9 network to the general contractor and all parties concerned, including the interior design consultant. The network has now been drafted into final form and I am presently preparing for computer runs on the diagram. These will be issued in the near future.



Monitoring Report #18  
Metropolitan Airport  
8-2-73  
Page two

Reviewing each area individually:

#### Site Work

The west parking lot and perimeter roadways will be placed in construction within the next week. It is apparent that close cooperation of all contractors is required for each to maintain effective field operations. Therefore, I suggest that the general contractor for the terminal building, the contractor for the parking lot and roadway work and the county hold a coordination meeting in which problems of access and scheduling of all actions be discussed.

Of particular importance is maintaining free access to the perimeter of the building, particularly at hoistways and perimeter access openings. It will also be critical that the precast canopy erector have access to the east elevation of the building in the very near future. Building precast is due to be completed within the next three weeks and it is planned that the canopy structural elements will be erected immediately following. This will start the third week in August.

Roofing at the low roof will be started as soon as masonry on the east elevation is complete and scaffolding at the low roof can be removed. This also will affect access routes for the site contractor.

#### Close-In

Close-in elements are rapidly being put in place, although there is still considerable leakage throughout the building from miscellaneous roof openings at hatches, around roof conductors and vents and through incomplete areas adjoining masonry. It will be critical to seal all of these openings as we move into finish work.

It is Mr. Van Nuck's intent to place the roof hatches this week and work is to start shortly on the skylight frames. However, glass will not be available for the skylights until August 25, 1973 (working day 168). Therefore, where required, temporary closures at the skylights will be provided. As mentioned above, precast concrete work is due to be completed within three weeks and it is expected that masonry should follow completion shortly after.

Overall, the present state of the close-in work is such that finish work could begin at interior areas, primarily on the south, central and north mezzanines.

South Mezzanine (SM)

Work here is in relatively good shape and Mr. Van Nuck feels that he can begin finish work which includes gyp board partitions, gyp board on columns and looking for plaster surfaces sometime next week. This work was due to start on August 1, 1973 (working day 150). Critical in this area are resinous column and truss covers. Resinous panels were approved July 23, 1973 (working day 143) and are in fabrication now. They should be on the job next week. Generally work at the south mezzanine can be considered to lag early start/early finish dates by about 3 to 5 working days but this should be considered a critical area since it is where all of finish trades start.

Center Mezzanine (CM)

Work here is currently meeting early start/early finish dates with masonry nearly complete. Masonry was due to be completed on August 7, 1973 (working day 154) and it appears this target can be met. Generally finish work at the center mezzanine was due to start on August 15, 1973 (working day 160) with installation of gyp board partitions and ceilings. If this work can be started at the south mezzanine next week, it is entirely possible that the center mezzanine schedule can be held.

North Mezzanine (NM)

Work here currently ranges between early and late start dates. Interior masonry is well along and most above ceiling rough work is near completion. The area present is in good condition.

South Lounge (SL)

Work continues here on above floor rough sheet metal duct work, mechanical piping and electrical feeders, and ranges between early and late start dates. Masonry has begun at the south lounge and is currently on schedule.

It was pointed out at the meeting that a potential delay item at the lounge might be sheet metal duct work below the mechanical rooms. This should be watched carefully since ceiling work in these finishes areas is critical.

Monitoring Report #18  
Metropolitan Airport  
8-2-73  
Page four

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Center Lounge (CL)

Work here is generally meeting early start/early finish dates. One area lagging slightly is the center stair from the apron level to the lounge level. Work has started on these stairs but they were due to be completed by August 8, 1973 (working day 155) so field measurements for architectural trim items could be made. This date will probably not be met.

North Lounge (NL)

Work at the north lounge is meeting early start/early finish dates.

South Apron (SA)

The floor slab on grade at the south apron has been completed and presently electrical underfloor duct and concrete topping are being installed at the high area. Work is generally meeting dates between early starts and late starts.

Central Apron (CA)

Work here is meeting early start/early finish dates. Work on the floor slab on grade is just getting underway with grading and filling of the granular sub base starting.

North Apron (NA)

Work here is currently meeting early start/early finish dates.

Flight Stations (FS)

Flight stations and concourse work continues to lag and is presently in an extremely serious condition. I recommend very strong steps be taken immediately to improve progress at these areas.

Some work has been done at the north flight station on supported decks at the second level and also in forming the bridge beams between the stair and elevator tower. However, little work has been done over the past three weeks on the core beam forming the main structure of the north concourse.

The job is now at a point where it is no longer feasible to consider a sequential construction from the north concourse and flight station area to the south concourse and flight station area. In my opinion, and it is my recommendation, that the contractors institute a program of concurrent construction which will allow the major parts of these structures to be completed as per our original schedule. Otherwise, excessive cold weather construction will be involved which makes it extremely difficult to maintain economy, progress and quality.

Flight stations have been cause for concern for several months and as has been mentioned, August would be an appropriate time to re-evaluate the work at these areas. We must immediately take steps to improve work progress at these areas or the project will have severe difficulties meeting its current end target date for complete construction.

#### **Color Selections**

The interior finish designer has been selected and is now working on the color schedule. This is a very important matter since many main building components are awaiting color selection.

#### **Critical Items include:**

- Slat at the slat ceiling
- Light fixture frames at the slat ceiling
- Bars at the bar ceiling
- Ceramic tile
- Vinyl tile
- Vinyl wall covering
- Paint
- Counter laminate finish
- Carpet
- Wood tones
- Toilet partitions
- Quarry tile

Monitoring Report #18  
Metropolitan Airport  
8-2-73  
Page six

All these elements but most especially the bar ceiling and light fixtures are very critical. We need immediate decisions since, in many instances, the items require long lead times for fabrication and delivery to the job site.

The interior design representative said that they are readying a presentation board for presentation to the commission on Thursday, August 9, 1973 (working day 133). I strongly advise that the presentation of this interior work be delayed no longer than that point since the board meets only weekly and every week's delay becomes more serious so far as delivery of critical materials are concerned.

#### Review

Overall, the building proper is moving relatively well in the field. Flight stations and concourse work lag more now than at any time on the job and immediate steps must be taken to correct and improve performance. Color selection and interior design work is now critical and I recommend the presentation needed to gain approvals be prepared and made to the commission at the earliest possible date. By August 9th this material should be ready for presentation and approvals should be expedited.

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Deusen  
Mr. Ken Hafer  
Mr. Wally Van Nuck  
Mr. Charles R. LeBlanc

August 16, 1973

**Subject: Monitoring Report #20**

**New International Terminal  
Metropolitan Airport  
Detroit, Michigan**

**Project: 72:64 - F**

**Date of Monitoring: August 14, 1973 (working day 159)**

**Monitored from Issue P9 dated July 3, 1973**

**Actions taken:**

- Inspected project
- Evaluated job progress
- Attended portion of construction conference

**General Summary**

As of August 14, 1973 (working day 149) the project again has slowed at the main building area, primarily in start of finish work at the south lounge. Flight stations and concourses also continue to lag seriously and although efforts have been intensified to speed construction of these areas, continued improvement of performance will be necessary to meet current committed end targets. Assurances have been given that these targets will be met.

Lags over late starts and late finishes at each of the major sectors of the project are listed below.

- South Mezzanine - Current lag 9 working days over late start/  
late finishes**
- Central Mezzanine - Current lag 0**
- North Mezzanine - Current lag 0**

**South Lounge - Current lag 0**  
is well along on it. The contractor is well along on it. The contractor is well along on it.  
**Control Lounge - Current lag 0**  
to the contractor. The contractor is well along on it.

**North Lounge - Current lag 0**

**South Mechanism**

**South Apron - Current lag 0**

The area is covered by the contractor. The contractor is well along on it. The contractor is well along on it.  
**Control Apron - Current lag 0**  
This work was not started. The contractor is well along on it.  
**North Apron - Current lag 0**

**North Flight Station and Concourse Work - Current lag 61 working days** (all flight station and concourse work over network model Issue #1 dated March 20, 1973)

**South Flight Station and Concourse Work - Current lag 31 working days**  
**Center Flight Station - Current lag 28 working days**

Reviewing each area individually:

### Site Work

Exterior construction on roads and parking areas has begun. It does not appear that this work is presently affecting access to the main terminal building. It should be kept in mind that the maintenance of free access to the main building and flight stations is critical to progress on these sections of the project. Also, erection of the canopy will require that free access be allowed at the east elevation.

### Class-In

Installation of skylights has begun at the lower roof on the east side. Masonry continues to move relatively well although generally close-in work over the last two weeks appears to have slowed slightly. There still is some water in the building but much of the leakage that was coming

**Monitoring Report #20  
Metropolitan Airport  
8-16-73  
Page four**

**RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER**

metal duct work, piping and rough electrical feeders and systems is quite far along. Finish work at the south lounge area is due to start on a late start date of September 4, 1973 (working day 173) on resinous column and truss covers.

#### **Center Lounge (CL)**

Work here is currently meeting dates between early starts and late starts. Finish work at the center lounge is due to start no later than the middle of September.

In the center section there is a sizable stairway running from the apron to the lounge level. This stairway is now being constructed and is reasonably critical since once it is built, field measurements will be necessary for fabrication of architectural trim items. Since this stairway is a feature stair and will require a large amount of finish work, I suggest construction of the stair be expedited.

#### **North Lounge (NL)**

Work at the north lounge is meeting early start/early finish dates.

#### **South Apron (SA)**

Concrete topping has been poured at the floor slab on grade and the south apron work generally is moving between early start/late start dates.

#### **Center Apron (CA)**

Floor slab on grade has been partially poured at the center and north apron areas. Work is in alignment with early start/early finish dates.

#### **North Apron (NA)**

North apron progress is currently ahead of early start dates.

#### **Flight Stations**

The bridge beams and concourse core beam at the north flight station and concourse system are taking their initial concrete pours today.



**Monitoring Report #20**  
**Metropolitan Airport**  
**8-16-73**  
**Page five**

**RALPH J. STEPHENSON, P.E.**  
**CONSULTING ENGINEER**

**August 14, 1973. According to our network plan of March 20, 1973, the first half of the concourse core beam was due to be poured out on May 17, 1973 (working day 98). This accounts directly for a 61 working day lag in the core beam construction. The bridge beams at the north were due to be complete on June 13, 1973 (working day 116) so currently lag in total completion by approximately 43 working days. The need to improve performance at the north flight station and concourse has been emphasized many times and that need remains as critical as previously.**

**South flight station work is at a point where forming for the bridge beams at stair #7 can begin shortly. The concourse core beam at the south was due to start on June 29, 1973 (working day 128) so it currently lags by 31 working days. Other concrete construction at the south flight station lags early start/early finishes by as much as 40 to 50 working days. However, the measure of this work can be taken from construction of the core beam.**

**Construction of the reinforced concrete stair tower at the center flight station has just begun and this work currently lags the March 20, 1973 network by approximately 28 working days. The exterior walls at stair #9 were due to be poured out to the mezzanine level by July 5, 1973 (working day 131). This accounts directly for the current lag.**

#### **Color Selections**

**Interior color selections remain critical as was pointed out in Monitoring Report #19 dated August 2, 1973. The interior design consultants will present their recommendations to the commission on Thursday, August 16, 1973 (working day 161). I again strongly recommend that a decision on interior colors and finishes be made rapidly so no more delays to deliveries of materials are incurred. This is a very important matter.**

#### **Review**

**Overall, the building proper has slowed progress over the last two weeks, primarily in interior finish work at the south mezzanine level. The current lag on the building work is approximately nine working days and will increase each day that the interior finish operation is not in work. Flight station and concourse work is still a source of serious concern even though there has been an increase in manpower over the last two weeks.**

**Monitoring Report #20  
Metropolitan Airport  
8-16-73  
Page six**

**RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER**

**Color selections and approval are currently important and should be received.**

**Ralph J. Stephenson, P.E.**

**RJS/m**

**To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Deusen  
Mr. Ken Hafer  
Mr. Wally Van Nuck  
Mr. Charles R. LeBlanc**

September 26, 1973

Subject: Monitoring Report #21

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project: 72:64 - F

Date of Monitoring: September 24, 1973 (working day 187)

Monitored from Issue P9 dated July 3, 1973

Actions taken:

- Inspected project
- Reviewed job progress with Mr. Van Nuck, job superintendent
- Attended project meeting with owner and architect

General Summary

As of September 24, 1973 (working day 187), the project will be monitored against Issue #1 dated September 23, 1973 which will be distributed late this week to all concerned. Issue #1 is basically Issue P9 dated July 3, 1973 redrafted to final form.

Reviewing the project, building work continues to slow at the mezzanine level where finish plastering was due to have started on August 1, 1973 (working day 150). It is now projected to start later this week - probably about September 26, 1973 (working day 189). This will give plastering, which is critical, a lag of approximately 39 working days. It is to be hoped that once plastering begins at the mezzanine level that time can be picked up in this trade over the entire floor to help recapture some of the lost time. Although we have diagrammed each level by thirds - south, central and north, presently rough trades have progressed far enough ahead so the floor levels can be considered in their entirety although they will still be monitored against the one third floor sections. This will be so as to allow selective identification of the various areas to be delivered on a staggered basis.

Monitoring Report #21  
Metropolitan Airport  
9-26-73  
Page two

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Note that the individual thirds of a floor are being scheduled so the early finish at the end of each third of a floor is critical. Thus, the end dates for each one third of the mezzanine, lounge and apron levels, will be shown in the Issue #1 network when released as being critical dates. This is a valid assumption since partial turnover of some of these areas is very important.

Reviewing each area of the building individually, we find the following.

#### South Mezzanine (SM)

As mentioned above, work here lags by a projected amount of approximately 39 working days in plaster. Gyp board is practically complete in the area, resinous column and truss covers have started and the area presently is waiting on plastering trades. It is the intent of Mr. Van Nuck to start plaster work by about the middle of this week. If this trade can move rapidly in the area, it is possible some time can be picked up on construction of the south third mezzanine. It should be remembered that this is one of the early delivery areas committed to by the contract schedule dates and will be an important area to turn over to the occupant for his installation work.

#### Central Mezzanine (CM)

The current lag here can be measured basically from installation of gyp board partitions and columns. This work was due to be completed on August 29, 1973 (working day 170). It is presently being held awaiting quotes on Bulletin #7 and the corresponding field order. This work will be released as soon as a satisfactory estimate of costs is given on the field order. The work in Bulletin #7 is critical to the area and affects door locations and other such items, all of which were detailed in earlier field conferences with the parties concerned.

The lag at the center mezzanine currently is about 22 working days.

#### North Mezzanine (NM)

Stud work has begun here but is being affected by Bulletin #7 work. Studs and gyp board were due to be completed on September 13, 1973 (working day 180) so the current lag at this area is approximately 7 working days. Again, it will be essential to begin plastering for the entire floor very quickly and carry on through in continuous fashion to pick up this lag.

South Lounge (SL)

South lounge above-salling rough mechanical and electrical work appears to be in excellent condition and masonry is well along. The electrical team to watch at this floor is resinous column covers and plaster surfaces. Plaster was due to start at an early date of August 28, 1973 (working day 163) but it has first time available to 18. Painting is due to start at the south lounge level on September 17, 1973 (working day 190). The lag at the floor can be started directly from the delay in start of painting.

Center Lounge (CL)

This area is in substantially the same current condition as the south lounge.

North Lounge (NL)

The north lounge area is critical since it is here that considerable leased space is to be located. The current target date for completion of space to be occupied by the eating and drinking areas is December 10, 1973 (working day 241). With current progress at the north lounge level, it is doubtful that this date will be met unless intensive work pickup can be initiated immediately. It should be pointed out that leased eating and drinking spaces will be critical to operation of the entire International facility.

East Area (EA)

Above floor mechanical and electrical work is well along at the south apron. The tapping slab is poured, and masonry is substantially complete. Work is presently moving in accordance with the current schedule.

Center Apron (CA)

Work at the center apron area is generally moving in conformance with the current work plan.

North Apron (NA)

Work at the north apron is presently in general alignment with the current work plan.

## Flight Stations

Bridge beams and the concourse core beam at the north flight station have been poured out and construction of the lounge level deck is in work. Work on north flight stations and concourse lags currently from 40 to 50 working days, primarily in construction of the bridge area slabs and the decks at the concourse core area. This is a slight improvement over previous monitoring and according to conversations at the site, it is hoped that additional improvements can be made in the casting, particularly of horizontal concrete surfaces.

At the south flight stations and concourses, work is in progress on forming the bridge beams between the stair tower and the elevator tower and on forming one side of the core beams. Overall work at the south concourse presently lags by about 35 working days, an increase over the previous monitoring. The lag, as has been the case in the past, is in construction of the concourse structure. Every effort must be made to improve performance in these areas if we are to have the three flight stations available at the projected facility opening of April 1, 1974.

Central flight station work has begun and I recommend we concentrate on completing all structural work on all three flight stations prior to the onset of heavy cold weather. Presently this is a severe schedule to meet but it will be to the advantage of all concerned particularly the concrete contractors to finish this work prior to the onset of cold weather. The heavy winter season which starts normally near the end of November is approximately 47 working days away. Just as rapidly as work is completed on the structure at the concourses, close-in operations should start so interior work in the north flight station and concourse areas can begin no later than early December. This is a critical starting point to enable the flight stations to be operative April 1, 1974.

## General Summary

Overall, the project lags in main building work from 30 to 40 working days and in the flight station work from 40 to 55 working days. The lag in the building is serious but is in such areas and of such nature that it is possible the entire amount can be recaptured, particularly if plastering is started immediately and if all problems revolving around Bulletin #7 are resolved quickly. It is important now to consider the advisability of doubling up finish crews in certain areas, particularly at the north lounge and mezzanine to meet interim occupancy dates committed to in the scheduling.

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

Monitoring Report #21  
Metropolitan Airport  
9-25-73  
Page five

Flight station work has not gained over the past month and a half and at the south has actually lost some ground. With the onset of cold weather, it is increasingly critical that the concrete work at these areas be completed.

Site work has begun at the east elevation of the job and is moving rapidly. The canopy is due in sometime the latter part of September. It will be necessary to get this structure erected very shortly since there is considerable roofing and plaster soffit work to install before winter.

Close-in of the building is presently not restraining any interior finish work at the mezzanine level. Glass for the skylights is due in the first week in October and it is expected that the building will be totally closed to weather shortly after.

Another problem that will soon be facing the job is heat. We should be able to obtain heat when required from the permanent system, but this matter should be discussed in detail at an early time so as to not incur any delay to finish operations.

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Dusen  
Mr. Ken Hafer  
Mr. Wally Van Nuck  
Mr. Charles R. LeBlanc

October 11, 1973

Subject: Monitoring Report #22

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

Project:

72164 - F

Date of Monitoring: October 9, 1973 (working day 198)

Monitored from Issue #1 dated September 23, 1973

Actions taken:

- Inspected project
- Participated in construction conference
- Evaluated job progress

General Summary:

As of October 9, 1973 (working day 198) the project is being monitored against Issue #1 dated September 23, 1973 which has been distributed to all major parties to the project.

Reviewing building work, it continues to lose major ground at the mezzanine and lounge levels, primarily due to a lack of plastering trades at the south mezzanine. Some installation of ceiling suspension and black iron is underway at toilet rooms on the mezzanine and lounge levels. However, the critical element is to begin sequencing work on major plastering and painting that follows at the south mezzanine, moving to the north on the mezzanine, up to the south lounge and to the north in the lounge and then down to the south apron and north on the apron. It also is important to keep in mind that there are certain staggered deliveries of areas, primarily at the south lounge, north mezzanine and south apron areas that should be watched carefully. Part of the early delivery sequence is completion of the freight elevator. I suggest that work now in progress on the passenger elevators be continued but that concurrently the freight elevator installation be initiated.



Overall the project now lags currently over the Issue #1 network by about 48 working days in interior finish work. This is a very critical loss since it represents literally no progress on key interior trades since the last monitoring report. Obviously there has been some work done on interior finish work but it is now critical to concentrate on the plastering trades and those that follow.

Flight station work continues to lag by 50 to 60 working days, primarily in concrete structural operations.

At the construction meeting several matters were discussed of importance to the project, the major of which is the increasingly difficult problem with deliveries of materials. Also of strong concern is the delay in obtaining prices on bulletins and the lag in submission and approval of samples and materials. This overall problem is not easy to pinpoint so far as responsibility is concerned.

A few of the more critical items were discussed at the construction conference. These included:

- quarry tile
- ceramic tile
- carpet

Quarry tile is a most difficult situation since delivery is very long on the present material. Some consideration is being given to a substitute and this matter should be worked on emergentially. Ceramic tile is also now encountering delivery problems with on-the-job commitments considerably later than had been originally hoped for. No carpet sample has been approved as yet and although there still is considerable time before carpeting will become truly critical, it is hoped we can begin installing carpet whenever an area is ready for it to optimize the flexibility of schedule.

Clase at the skylights is now arriving on the job for the high roof area. However, there has been a problem with the incorrect fabricated size being shipped for the low roof area and this material is now being redone. It is due on the job within the next two weeks.

Bulletin #7 is still not complete and this is currently a partial cause of the delay at the commencement of the start of plastering. However, Bulletin #7 is affecting work mainly in the central and north portions which does not prevent plastering work from starting at the south. Bulletin #7 and the corresponding field order #15 should be cleared as quickly as possible.

**Monitoring Report #22  
Metropolitan Airport  
10-11-73  
Page three**

**RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER**

**The exterior canopy is now substantially erected except for some elements at the north end. The general contractor must plaster and roof this canopy prior to onset of winter so I suggest heavy attention be given to expediting delivery of the remaining precast elements.**

**Glazing at the lounge level is still not started and no one at the meeting was able to give a firm date for its beginning. It is an important part of the close-in operation and should be done soon.**

**Reviewing each area specifically, we find the following:**

**South Mezzanine (SM)**

**Work here lags by the greatest amount in the building - approximately 48 working days in plastering. This lag will probably increase to as much as 55 working days and it is critical for plastering and other interior finish work to start in the very near future. The entire interior finish sequence starts from this portion of the mezzanine and any continued lags there will cause serious disruption to the sequence.**

**Resinous column and truss covers have moved very slowly since the last monitoring and there is no discernible progress. This work should also be expedited so we can begin pushing the various trades out of areas in which following trades are to be installed.**

**Central Mezzanine (CM)**

**The current lag at the central mezzanine is approximately 38 working days measured against the start of plastering. Here, however, Bulletin #7 is also holding up work and it is, as mentioned above, important to get this bulletin cleared so that work can proceed.**

**North Mezzanine (NM)**

**The lag at the north mezzanine is currently 28 working days and in the same general items as for the south and central mezzanine areas.**

**South Lounge (SL)**

**It appears that the south lounge rough masonry and mechanical electrical work is substantially completed. The area is generally ready for installation of wall and plaster ceiling work which should be starting soon. The lag here is currently 18 working days, primarily in start of plastering.**

**Monitoring Report #22  
Metropolitan Airport  
10-11-73  
Page four**

**RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER**

### **Center Lounge (CL)**

The lag at the center lounge is about 8 working days currently and is in substantially the same items as at the south lounge.

### **North Lounge (NL)**

Work here is rapidly becoming critical since this will be one of the key areas to be occupied. The current target date for completion of the space to be occupied by the eating and drinking areas is December 10, 1973 (working day 241). It appears doubtful that this date can be met unless an intensive concurrent work pickup can be initiated in all areas of the mezzanine and lounge levels.

### **South Apron (SA)**

Work at the apron level continues to generally move in accordance with early start/early finish dates. However, interior finish trades will soon become critical and possibly lag at this level also. This is the level that will be most affected by any changes to quarry tile material selection.

### **Center Apron (CA)**

Work at the center apron area is currently moving in conformance with the network plan.

### **North Apron (NA)**

North apron work is currently moving in general accordance with the current network diagram.

### **Flight Stations**

At the north flight station the roof deck of the structure has been poured and stripped and close-in work is underway at the lower level. The lounge level core beam slab has been constructed and work on the core beam from the lounge level up is in work. Current lag at the north flight station remains about 55 to 60 working days.

The south flight station bridge beams for connection to the elevator area are still not poured. From field observation, it appears that this work could be poured sometime this week. Work is continuing on core beam construction and it is still anticipated that the pour-out date for the core beam will be October 19, 1973 (working day 206). If this date is met, the lag at the core beam area to the south will be 55 working days.

Overall, work in the north and south concourse and flight stations has shown no pickup and if anything, a slight loss over the last three week period.

The mezzanine deck is being formed at the center flight station and this work currently is moving relatively well, being only 21 working days behind our schedule of operations.

### General Summary

Overall the project has slipped badly in work at the main building area over the past two and a half weeks. The lag is now about 48 working days and the main lagging items, plaster at the mezzanine level, shows little. If any, signs of starting in a good heavy sequence of activity in the immediate future. Steps should be taken to get this trade underway and at the proper starting point so the sequence can be maintained.

Chase-In of the building is still only partially complete and there are still sizable spots in installation of the glass at the skylights and in the south and glazing at the lounge level.

Bulletin 7 still poses problems and I suggest that all concerned work hard now to clear all the bulletins on the job. These are beginning to cause serious problems evident in the construction meetings and are a deterrent to proper job administration.

Flight station work continues to lag by 50 to 60 working days and I do not expect that there will be any major pickup in this time. It is still critical that those flight stations be given every attention since they must be available on the startup date of April 1, 1974.

Ralph J. Stephenson, P.E.

RJS/un

To: Mr. Richard Barnwell  
Mr. Robert Kania  
Mr. Charles Van Dusen  
Mr. Ken Hafer  
Mr. Wally Van Nuck  
Mr. Roy Bishop

October 20, 1973

**Subject: Monitoring Report #21**

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

**Project: 72164 - F**

**Date of Monitoring: October 18, 1973 (working day 205)**

**Monitored from Issue #1 dated September 23, 1973**

**Actions taken:**

- Inspected project
- Conferred with Wally Van Nuck re job progress
- Consulted with Mr. Robert Kania re job progress
- Evaluated job status

**General Summary**

As of October 18, 1973 (working day 205) the building has lost additional ground, primarily due to the continued lack of startup on plastering operations at the mezzanine. Plastering there was due to start on August 1, 1973 (working day 150). Now it is projected to start next Monday, October 22, 1973 (working day 207). This gives plastering in the building a projected 57 day lag. In conversations with Mr. Van Nuck, he said that when brown coating begins it will probably carry all the way on through the mezzanine and lounge levels in one sweep. I strongly urge that this plastering sequence be reviewed carefully in the field against the committed interim target points so that selective operations required to finish areas by contract are carefully considered. Finish work in these areas making them ready for tenant turnover should be completed in timely fashion.

At present it is my opinion that the early occupancy dates, particularly for the FIS areas at the south mezzanine and apron level will not be met. I strongly urge that critical interim sectors of the building be given careful field attention particularly since the job is now lagging by a considerable amount, so we do not overly penalize the interim move-in schedule. This move-in schedule was contained in the formal extension of time granted to the job by the commissioners.

There still is considerable work to be done on resolving administrative problems, primarily dealing with change orders and bulletins. This work which normally would be processed in timely fashion is bogging the job down to the point where it will seriously affect the possibility of completing on our present schedule. At this time I have doubts because of delays to start of plastering, the complicated problem of scarce quarry tile, the matter of selection of materials and colors that cause apparent fabrication problems and other such elements whether they be real or illusory. Such difficulties must be resolved promptly with no delay or this project will not make its present target date.

I still believe, although with decreasing certainty, that the project could be made available on our present target of April 1, 1974 barring major job disruptions. However, within the next four to six weeks, work, particularly finish work begun and carried through in the building, will indicate the true job status.

Flight station work still lags the network by 50 to 60 working days. However, there are strong signs that the structure of this set of units is beginning to move better. It is entirely possible that the north and south facility, if horizontal surfaces are cast at the same rate with which they are now being built, will be done by early winter. At that time the center flight station structure can be concentrated upon and could quite possibly be completed by shortly after the turn of the year.

Close-in work on the north flight station is moving fairly well and that area will soon be ready for installation of rough and finish interior trades. If the same pattern is followed at the north at the south, this area too could be ready for interior rough trades shortly.

Close-in of the main building still seems to be a problem and this is apparently being held particularly at the ground level where concrete sidewalk finishes await such by decisions required on certain materials and textures. Glass at the lower skylights is delayed because of incorrect fabrication and this area remains open. At the west elevation the lounge level still is not enclosed - apparently there is some detail approval difficulties on the sill at this elevation.

At the south, middle and north mezzanine level, Bulletin #7 still is the major delaying factor although I gather that work is going to start there on plastering Monday irrespective of the resolution of this matter.

It should be pointed out again that there still is a large backlog of unresolved bulletins. This can cause nothing but difficulties and troubles in the coming weeks. It is absolutely essential these problems be ironed out so that field operations both for the owner and for the contractors can move smoothly as

**Monitoring Report #23**  
**Metropolitan Airport**  
**10-20-73**  
**Page three**

**RALPH J. STEPHENSON, P. E.**  
**CONSULTING ENGINEER**

we near the end of the job. The project had gained considerable momentum and was well on its way to comfortably meeting the scheduled finish dates. Now, however, there is serious doubt in my mind that we can achieve this goal unless immediate, positive, constructive steps are taken to iron out procedural delays that all parties are encountering - owner, architect/engineer, interior designer, contractors and subcontractors.

**Ralph J. Stephenson, P. E.**

**RJS/m**

**To: Mr. Richard Samuels**  
**Mr. Robert Kania**  
**Mr. Charles Van Deusen**  
**Mr. Ken Hafer**  
**Mr. Wally Van Nuck**  
**Mr. Roy Bishop**

November 15, 1973

**Subject:**           Monitoring Report #24  
  
New International Terminal  
Metropolitan Airport  
Detroit, Michigan

**Project:**           72:64 - P

**Date of Monitoring:** November 6, 1973, (working day 218)

**Monitored from Issue #1,** dated September 23, 1973

**Actions taken:**

- Inspected project
- Participated in a special construction conference
- Evaluated job progress

**General Summary**

As of November 6, 1973, (working day 218), the interior finish work at the main terminal building continues to drop further behind in start of major interior work. Flight stations and concourse structures progress is improving and at present it appears we will be able to complete major concrete work on these by early winter. At our special meeting we concentrated discussing on the problem areas that continue to trouble the job.

The major of these at present include a tightening of usually easy-to-get material supply and extended delivery delays which apparently are not possible to resolve easily. As part of this discussion we reviewed some of the items that fall in this category. They include:

- Class for skylights (although now arriving on job)
- Curtain wall aluminum
- Carpet
- Ceramic tile, and
- Light fixtures at the slat ceilings



The group discussed this matter in general and Mr. Samuels was asked to submit a list of all materials that have become critical and could possibly hold up the project. This list will be used as a basis for all parties concerned to review their respective positions and see how they can best assist in alleviating problems caused by the shortages. Mr. Samuels said he would have the list to the staff by the end of the week. I also suggested we meet regularly in a smaller group so policy and high level decision making matters can be reviewed most expeditiously. This was agreed to.

It is absolutely critical if we are to maintain our present target for completion of April 1, 1974, that we make every effort to resolve problems as they occur. Thus the special meetings should concentrate on doing just that.

Reviewing the project we find the following:

South Mezzanine (SM)

Work at the south mezzanine now lags by 68 working days primarily in start of plastering which it should be pointed out unlocks start of painting. When we refer to the start of a finish phase on a floor or a section we are referring to those trades which can only be installed with full weather protection. Since the entire project interior finish work has been planned to start at the south mezzanine this then is the Bell cow for the entire work sequence.

Intensive efforts are being made to begin work on finish trades and with some overlapping along with a compression of time on some tasks, I still feel it is possible to meet our finish date provided the material supply problems are resolved.

I do not believe, however, that the staggered delivery schedule reflected in our revised target dates can be met. This is particularly so at the south mezzanine level where most of this work must begin.

Central Mezzanine (CM)

The central mezzanine has had some plastering completed at the smaller rooms. It currently lags the plan of work by 46 working days.

North Mezzanine (NM)

The lag at the north mezzanine is currently 44 working days in trades similar to those at the central and south mezzanines.

### South Lounge (SL)

South lounge work currently lags in finish trades by 33 working days. This area is also being delayed by lack of close in. Sash has still not been erected at the west elevation and is contributing considerably to the discomfort and difficulties in moving work on schedule at that level.

In our special meeting it was pointed out by the contractor that temporary protection would be provided promptly at this level. It is critical. Another item that must be given careful attention at the lounge and apron levels is installation of resinous panels. The general contractor discussed this matter and assured the owner that the trade would be manned adequately to meet current date commitments particularly at the lounge and apron levels.

### Center Lounge (CL)

The lag at the center lounge is about 26 working days in finish trades.

### North Lounge (NL)

The north lounge lags by 16 working days in finished trades. This area too is a high priority early occupancy area. It should be emphasized that there is a strong need if the entire facility is to be opened on the same scheduled date to concentrate on leasing and obtaining layout drawing and information for the space to be occupied. Presently we are proceeding on the basis that this space will be made available as an unfinished space and will be remodeled to fit the needs of the tenant.

### South Apron (SA)

At the present time we are just at the late start date of plastering due to begin on November 7, 1973, (working day 219). If work can be moved quickly at the apron level it is possible at this area could maintain pace with the job. In essence it means that the finish areas at the apron have to be completed concurrently with the mezzanine and lounge level finish areas. This matter should be given attention since it is a way by which the project can be completed on schedule.

### Center Apron (CA)

This area currently meeting late start, late finish dates. However, it will be critical to work the center in direct sequence with the south apron area to maintain progress. An item of concern is the installation of resinous panels. These were given 23 working days duration in each third of

Monitoring Report #24  
New International Terminal  
Metropolitan Airport  
Detroit, Michigan  
Page four

RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER

the apron level. This, apparently, is now considered adequate installation time for these panels. Currently there is no lag at the center apron area.

#### North Apron (NA)

North Apron work is currently in general accordance with the late start, late finish dates.

#### Flight Stations

The north flight station is being closed in and interior work has started. Work currently in progress at the north concourse is basically on the cantilever roof deck. It appears that the north concourse and flight station work can be completed substantially in time for opening of the terminal on April 1, 1974.

The south flight station bridge beam work and core beam construction to the lounge has been substantially completed and heavy activity has now been concentrated on the supported deck. South concourse work still lags by approximately 57 working days. However, concurrently with concourse construction the flight station is expected to be closed in and interior work can undoubtedly start. This may allow us to pick up some additional time at the south concourse area.

Center concourse work is now being concentrated on with supported decks and bridge beams being formed and poured. This is a simpler structural element than were the north and south concourses and can be completed in time if moved concurrently with the south concourse work. At present it appears we may be able to finish concourse and flight station work if the present pace on these elements is maintained. It is to be emphasized that as with the mainbuilding, close in of the areas is essential and must be accomplished prior to the onset of full winter weather.

Ralph J. Stephenson, P.E.

RJS/dv

To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Deusen  
Mr. Ken Rafer  
Mr. Wally Van Nuck  
Mr. Roy Bishop

December 7, 1973

**Subject: Monitoring Report #25**

**New International Terminal  
Metropolitan Airport  
Detroit, Michigan**

**Projects 72:64 - F**

**Date of Monitoring: December 3, 1973 (working day 236) and  
December 4, 1973 (working day 237)**

**Monitored from Issue #1 dated September 23, 1973**

**Target Completion Date: April 1, 1974 (working day 319)**

**Actions taken:**

- Inspected project
- Reviewed job progress with Mr. Van Nuck, superintendent
- Participated in special construction conference
- Evaluated job progress

**General Summary**

As of December 3, 1973 (working day 236), the project continues to lose ground at the main terminal building. The major problem still is beginning intensive interior finish work at all levels. This problem was the subject of the special conference held on Tuesday P. M., December 4, 1973.

Flight station and concourse structure progress continues to improve and it appears now if certain basic decisions to be made this week are expedited, we should be able to complete flight station and concourse work by our present target of April 1, 1974 (working day 319). However, progress at the main building is presently at such a lag point that making up the time even provided timely deliveries can be obtained will be difficult. This, coupled with the fact that material shortages are growing in intensity every day, makes it desirable to prepare a re-evaluation of the plan of construction activity from now until the end of the project.

I shall be in touch with Mr. Samuels, Mr. Kania and Mr. Van Nuch regarding the most appropriate time for such a re-evaluation. We will wait until certain items discussed at the special meeting are resolved. This should be in the near future.

Reviewing the project, we find the following:

**South Meszanine (SM)**

The lag at the south meszanine is currently 76 working days directly in start of painting. This work unless subsequent finish trades that follow and although not a major item in itself, signifies the continuation of interior finish work. The major holdups to the start of painting are twofold. First, the building is still not tight to weather, particularly at the north and south perimeters. This building tightening will require a protective roof or base sheet at the small canopy above. The cost of this is now being investigated and a decision will be forthcoming immediately.

Second, insulation of interior stud walls has been stopped pending review and approval of the insulation being used. This matter hopefully will be resolved soon and if a suitable insulation material is available, the action will restart as soon as the approvals are obtained. The matter is critical since currently much of the stud wall work at the meszanine level is being held for placement of wall insulation.

Once these two items are resolved, interior work on painting and the following trades can be started immediately. It does not appear at present that we will be able to meet our staggered delivery date commitments for the meszanine. New interior occupancy points will be determined from the network when the replanning is completed.

**Central Meszanine (CM)**

Current lag at the central meszanine is 66 working days in interior finish trades. Generally the same comments apply at the center as at the south meszanine.

**North Meszanine (NM)**

The lag at the north meszanine is currently 56 working days in interior finish trades. Comments for the south meszanine apply here also.

**Monitoring Report #25  
Metropolitan Airport  
12-7-73  
Page three**

**RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER**

**South Lounge (SL)**

The lag at the south lounge area is 41 working days and is directly in installation of the slat ceiling suspension, conduit and grid. This work was due to begin on October 4, 1974 (working day 195) and is just now getting underway. Painting will proceed concurrently at the lounge level with installation of the ceiling work.

It should be pointed out there is considerable corrective work to be accomplished on already installed resinous column and beam covers. This work should be given careful attention since it soon will restrain full work on the slat ceiling.

Another problem that has presented itself in respect to the slat ceiling at the lounge area is that the current light fixture proposed is not yet approved by underwriter's laboratory. This approval is required but indefinite and no one at present has a firm answer on when it will be obtained. Furthermore, delivery of the fixtures is 10 to 15 weeks after approval. Therefore, concentrated efforts are currently underway to resolve this matter immediately.

Important to completion of lounge finish work is installation of the exterior curtainwall at the west elevation. This area is currently being held for glazing by lack of gaskets. These gaskets should be on the job sometime within the next two weeks. Meanwhile temporary partitions have been placed at the exterior wall.

**Center Lounge (CL)**

The current lag at the center lounge is about 30 working days, primarily in the same finish elements as for the south lounge.

**North Lounge (NL)**

The lag at the north lounge is currently 21 working days in the same interior finish work as for the other lounge areas. It should be emphasized that closing the north and south perimeter areas at the roof is essential for lounge level finishes to be installed.

Page four

South Apron (SA)

The lag at the south apron is 26 working days and is in resinous column and truss cover work. This work was due to begin on October 26, 1973 (working day 211). It is just now getting into full swing and the item being critical is a direct lag cause. It is thought that at the apron level the tempo of installation on resinous covers can be picked up so that presently the target for completion of all truss and column covers at the apron, both high and low areas, is the third week in January, or approximately January 18, 1974 (working day 268). If this target can be met, it will reschedule some of the current lag time.

Center Apron (CA)

It was assumed that resinous work could begin at the south and center sections concurrently, therefore, the lag at the center section is also about 26 working days.

Changes are now in work at the area under the escalator and these should be watched carefully so as not to delay the job.

North Apron (NA)

The lag at the north apron in resinous column and truss covers is currently 4 to 8 working days. However, this lag will increase as work there is delayed in starting. Therefore, it can be considered that overall the lag at the north end might range as high as 15 to 20 working days.

• • • • •

In the meeting we addressed ourselves to an analysis of immediate as well as the longer range problems and to a discussion of materials and installations causing the most problems.

First, the necessity for closing in the building on the perimeter is quite apparent. This is restraining painting, ceiling work and other trades at all levels. Presently the thought is to lay a base sheet in lieu of completing the roofing until suitable materials can be located. This is being reviewed by the contractor and the owner and a decision will be made within two days.

**Monitoring Report #25  
Metropolitan Airport  
12-7-73  
Page five**

**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

**Another major problem is insulation at the mezzanine level. This matter was discussed as noted above and a decision is imminent later this week. Hopefully, some adequate substitute readily available can be found and approved.**

**There is no major holdup on the slat ceiling suspension and grid, however, at the lounge level, light fixtures as noted above have not yet been fabricated and are being held pending an underwriter's label. This matter came in for intensive discussion during which it was urged that a search be made for an adequate substitute fixture. Also being evaluated is the impact upon the finished building of not having these light fixtures available for a date early enough to insure installation by April 1, 1974.**

**Resinous panels, it was decided are not currently, nor should they restrain the job much more than at the present time. The lag generally caused by resinous panels is on the order of 26 working days, primarily at the apron level. Most of the material is apparently now on the job and some of the time can be picked up.**

**Temporary heat should be available a week from Friday, on December 14, 1973 (working day 245). This temporary heat has been held by delays to obtaining electrical connections. However, the matter is resolved now.**

**Plumbing fixtures apparently pose no current problems. However, a careful check should be made on them and if possible, they should be brought on the job and either installed or stored so we are insured a supply of these fixtures.**

**Ceramic tile is still a long lead time delivery item. However, it is now expected that ceramic will be on the job the first week in January and should be installed in adequate time for the April 1 target.**

**Plastic faced doors are a very serious delay potential since current delivery is about 20 weeks. This, of course, would put installation of doors past the target completion date of the building. Therefore, a review of what type door might be an adequate interim substitute is presently being made, while efforts are underway to expedite delivery of the as-specified door.**

**Carpet delivery is presently scheduled for April 15, 1973 - a date considerably beyond our current target date. Assuming installation is**



**Monitoring Report #25  
Metropolitan Airport  
12-7-73  
Page six**

**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

two weeks to one month, it delays the areas where carpet is required for occupancy by 1 to 1-1/2 months. We are presently exploring incentive offers to various parties involved and also evaluating the impact of not having carpet available on the April 1st opening date. It may be possible to carpet the project while it is in operation.

In fact, the airport staff is presently reviewing all long lead time and difficult to get items to see where, by our April 1st, 1974 date, we might not have materials on the job. This, to determine whether areas can be opened to the public for use on that date without being totally complete.

Therefore, of all of the items mentioned above, the present most critical decision points revolve around the roofing base sheet, interim door material, carpet delivery, slot ceiling light fixtures and most important, wall insulation at the mezzanine.

It was pointed out by Mr. Hafer that the lounge area which is most affected by some of our current major long lead time delivery items is primarily for incoming passengers. It might be possible to resolve a traffic pattern where it was not necessary to utilize this space fully in the early opening days of the International facility.

Conveyors for the apron level are due in during the month of January and should be complete by the end of February.

We now need information regarding various tenant spaces. This will be worked on by the Wayne County staff immediately.

Overall the project currently appears in serious trouble, so far as interior finish work is concerned. However, with some accommodations, selective expediting and a review of the required traffic pattern for operation of the facility, it might be possible to still make our April 1st target for certain areas of the facility. This matter will come into intensive study over the next week and will be reflected in an updated plan of work, to be prepared after additional information has been obtained on critical items.

**Ralph J. Stephenson, P.E.**

**RJS/m**

**To: Messrs. Samuels, Kania,  
Van Dusen, Hafer,  
Van Nuck, Bishop**

December 18, 1973

**Subject:** Monitoring Report #26

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

**Project:** 72,64 - F

**Date of Monitoring:** December 14, 1973 (working day 245)

**Monitored from Issue #2** dated September 23, 1973 and updated Issue #2  
dated November 14, 1973

**Present Target Completion Date:** April 1, 1974 (working day 319)

**Actions taken:**

- Rediagrammed interior work for mezzanine, lounge and apron levels with Mr. Robert Kania and Mr. Richard Samuels

**General Summary**

This conference was basically to review the decisions due to have been made over the past week and a half and to re-evaluate the finish dates of the job in accordance with the present status of the project. The project is encountering severe difficulties with material shortages, particularly insulation, roofing, aluminum and formica. In addition, color selections continue to be critical for paint, and delivery on carpet still is scheduled late in March (presently due on job March 18, 1974, working day 309). We also have other delivery problems including:

- 1) Light fixtures at the mezzanine balcony and at the lounge - This light fixture problem is not resolved and there still is no word on UL approval of the ballast portion of the light. Inquiries are still in progress about fixtures and it is now exceptionally critical that we follow this to its conclusion and establish firm delivery dates. In our conference Mr. Samuels and I assumed we would be able to have these fixtures on the job January 23, 1974 (working day 271). If there is a delay to this, it is entirely possible that we will have to further re-evaluate the current plan of work.

- 2) Formica covered doors - Formica covered doors are presently in short supply due to difficulty in obtaining plastic materials. We have assumed we can have these doors on the job by February 1, 1974 (working day 278). If we are not able to obtain them by then, it is possible that where security problems exist and we are coming near occupancy, substitutes can be made as appropriate. Again, I urge every effort be made to expedite this matter.
- 3) Roofing base sheet - At our meeting on December 4, 1973 it was emphasized that the base sheet was absolutely essential to put this building in the dry so painting could begin at the mezzanine level. The matter has still not been resolved and it remains critical. Paint colors were issued on a bulletin which is now being released on a field order so it does become an official part of the contract. This will allow paint to be brought on the job and painting to start at the mezzanine on Monday, December 17, 1973 (working day 246) if the building is dry.
- 4) Carpet - We are still assuming a carpet delivery date of March 18, 1974 (working day 309). In our assumption, it is presumed this carpet will be installed over the period of time from March 18, 1974 (working day 309) through to April 24, 1974 (working day 336). It is advisable to keep exploring the possibility of tightening up this installation schedule and improving the delivery date.

Reviewing the results of our preliminary rediagramming, we came up with the following tentative completion dates (with exceptions as noted) at each section of the project. It is to be emphasized that these are preliminary computations based upon information as outlined above and must be checked. However, presently we will base our current in-field operations upon these targets.

- |                         |   |
|-------------------------|---|
| South Mezzanine (SM) -  | complete January 30, 1974 (working day 276), minus doors, special lights and carpet |
| Center Mezzanine (CM) - | complete February 8, 1974 (working day 283), minus doors, special lights and carpet |

**Monitoring Report #26  
Metropolitan Airport  
12-18-73  
Page three**

**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

North Mezzanine (NM)	-	complete February 11, 1974 (working day 284), minus doors, special lights and carpet
South Lounge (SL)	-	complete February 26, 1974 (working day 295), minus doors and carpet Note: It is presumed that special light fixtures will be delivered by January 23, 1974 (working day 271)
Center Lounge (CL)	-	complete March 8, 1974 (working day 303), minus doors and carpet
North Lounge (NL)	-	complete March 22, 1974 (working day 313), minus carpet
South Apron (SA)	-	complete March 13, 1974 (working day 306), minus carpet
Center Apron (CA)	-	complete March 26, 1974 (working day 315), minus carpet
North Apron (NA)	-	complete April 15, 1974 (working day 329), minus carpet
Overall	-	Carpet complete April 24, 1974 (working day 336)

The above dates again are only preliminary calculations of the revised network. The move-in dates for various tenants as defined in our staged occupancy specification can be derived from this schedule when firm since we will establish these as finish points for the various areas. In the case of special light fixtures, doors and carpet, we will allow these items to float out to the end of that respective trade installation.

In summary, the project has lost a large amount of time for a large variety of reasons, many of which have been summarized in the various meetings that have been held over the past two months. Our work today took the project from its present position and attempted to redefine the possible and probable target dates in various areas that could be met.

There is a slight possibility that the project could still be completed by April 1, 1974 (working day 319) but with the present uncertainty in the marketplace on materials with the current lag on the project and most especially with

Monitoring Report #26  
Metropolitan Airport  
12-18-73  
Page four

RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER

the problem of starting up installation of some trades that are not well established procedural operations such as the slat ceiling, I do not recommend we presently consider April 1st, 1974 as a firm completion point. After much discussion with Mr. Samuels and with members of the Wayne County staff subsequent to our updating meeting, it was decided to use the end date as calculated for our interim scheduling and field action work. Mr. Samuels and I abstracted a detailed list of dates for various elements in the nine sections above and these are to be furnished to his subcontractors for their guidance in delivery of materials to the job site. Generally he abstracted starting dates for:

- painting
- acoustic ceiling grid
- acoustic ceiling light fixtures
- slat ceiling carriers
- slat ceiling light fixtures
- slats for the slat ceiling
- resilient floor tile
- quarry tile
- ceramic tile
- toilet room partitions
- carpet
- resinous panels for the trusses and columns
- acoustic ceiling panels
- doors
- millwork

I suggest that we evaluate job progress over the next two to four weeks, meanwhile firming up the revised network model. During this period we also should resolve light fixtures at the slat ceilings, color selections, carpet and the base sheet at the roof. This will allow us then right after the beginning of the year to complete firm replanning of the project and take the formal steps necessary to adopt this target date.

Ralph J. Stephenson, P. E.

RJS/m

To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Deusen  
Mr. Ken Hafer  
Mr. Wally Van Nuck  
Mr. Roy Bishop

January 10, 1974

**Subject: Monitoring Report #27**

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

**Project: 72:64 - F**

**Date of Monitoring: January 4, 1974 (working day 258)**

**Monitored from Updated Issue #2 dated December 14, 1973**

**Present Target Completion Date: April 1, 1974 (working day 319)**

**Working Days Remaining: 61**

**Actions taken:**

- Inspected project
- Reviewed job progress with Mr. Van Nuck
- Reviewed job progress with Mr. Robert Kania

**General Summary**

The project is presently being monitored against the rough network diagram prepared on Friday, December 14, 1973 in conjunction with Mr. Samuels and Mr. Kania. This network projects completion dates for each section of the project as noted in Monitoring Report #26 dated December 18, 1973. These dates were reviewed with the Wayne County Road Commission staff on Tuesday P.M., December 18, 1973 and it was decided that we would defer requesting a formal extension of time until a better evaluation of difficult-to-get delivery items was made - probably during the month of January.

There still are some serious delivery and field problems that must be resolved. Today I discussed several of these with Mr. Van Nuck and later with Mr. Kania.

**Monitoring Report #27**  
**Metropolitan Airport**  
**1-10-74**  
**Page two**

**RALPH J. STEPHENSON, P. E.**  
**CONSULTING ENGINEER**

Measuring the job against the updated diagram of December 14, 1973, we find the following lags in respect to late start and late finish dates:

<u>Location</u>	<u>Target Completion</u>	<u>Current Lag</u>
South Mezzanine (SM)	Jan. 30, 1974 (w/d 276)	3 working days
Center Mezzanine (CM)	Feb. 8, 1974 (w/d 283)	3 working days
North Mezzanine (NM)	Feb. 11, 1974 (w/d 284)	0 working days
South Lounge (SL)	Feb. 26, 1974 (w/d 295)	0 working days
Center Lounge (CL)	Mar. 8, 1974 (w/d 303)	0 working days
North Lounge (NL)	Mar. 22, 1974 (w/d 313)	0 working days
South Apron (SA)	Mar. 13, 1974 (w/d 306)	0 working days
Center Apron (CA)	Mar. 26, 1974 (w/d 315)	0 working days
North Apron (NA)	Apr. 13, 1974 (w/d 329)	0 working days
Overall (Carpet complete)	Apr. 24, 1974 (w/d 336)	0 working days

**Flight Stations**

Presently the heavy concentration of structural work is on the south and center flight stations. It appears now that these will be substantially complete so far as structural work is concerned by the end of January. Close-in will proceed immediately so it appears at present that flight stations will be available with interior finishes complete by April 1, 1974 (working day 319).

It should be noted here that the flight stations will require installation of the movable passenger tunnels to be fully operative. I urge that attention be given these passenger tunnels immediately if it is expected to have them operative by our present target completions.

**Monitoring Report #27**  
**Metropolitan Airport**  
**1-10-74**  
**Page three**

**RALPH J. STEPHENSON, P. E.**  
**CONSULTING ENGINEER**

**Present problems on the job that should be given immediate attention include:**

**Total Close-in**

Approval has been given on the material for application as a base sheet. At present there is no holdup to this installation and any minor delays due to communications or field problems should be resolved immediately. We need to get the two ends of the building totally closed, with roofing base sheet, as well as sash and glass, to prevent the blowing leakage that present prevents total finish work.

Sash is being held by a minor field disagreement on the size of the setting blocks and also by the need for approvals on the structural characteristics of certain sash sections. Some concern was also expressed about a delay due to the approval of the sealant on sash and glazing. If this is a holdup, it should be settled now.

**Delivery of Type L Light Fixtures**

There still is no clearcut answer by anyone as to why this fixture is being delayed. Since apparently the information continues to be passed along second and third hand, I suggest that a direct communication, preferably by phone be instituted with four parties involved - the general contractor, the road commission staff, the engineer and the supplier of the fixture - Lightolier. If possible, the top representative in each of these organizations should be involved in this direct discussion. The project can no longer afford to accept fuzzy and indefinite commitments about the problem. Target completion is too close.

**Interferences at Lounge Level**

Mockups of the type L light fixture show that there is a serious interference of the fixture with the presently installed sheet metal duct work. This matter is now under intensive study by all concerned and it must be solved immediately. The slot ceiling installer is already well along with his carrier system at the ceiling and unless a resolution is made within the next day or two, there will be problems of reworking the grid to accept this fixture. This is a critical matter and probably one of the most important of the problem areas.



**Monitoring Report #27**  
**Metropolitan Airport**  
**1-10-74**  
**Page four**

**RALPH J. STEPHENSON, P. E.**  
**CONSULTING ENGINEER**

### **Waterproofing under Ceramic**

There is some confusion about the suitability of the present called-for waterproofing system. Conflicting stories about this exist. Although ceramic is not an exceptionally critical item at this point, it is on the job and the installer is ready to go to work. Installation of ceramic restrains installation of toilet room plumbing fixtures and partitions and accessories. Therefore, an early start should be gotten on this item so that it does not become a holdup later on.

### **Ceiling Installation**

The major elements holding ceiling installation have now been resolved and painting is well in work at the mezzanine level. The electrician is badly in need of substantial areas to work in which he can install branch wiring and fixtures since this is for him a long installation time item. I suggest every effort be bent immediately on the job to providing the electrician with adequate area so he can begin installing the large number of fixtures he has available on the job site.

### **Plastering**

There are still large numbers of areas and surfaces to be plastered, particularly in the apron high ceiling areas. This is a messy trade and will affect much of the interior work installation, particularly at the center section where the escalator must be installed concurrently with plastering operations. Plastering presently is being restrained by slow installation of the resinous truss covers and I urge that every effort be made to continue expediting installation of the resinous material. There has been a considerable improvement in this installation over the last two weeks but it still is a major delay to plastering.

Another area that is critical for plaster is the low ceiling plaster drop on the west wall at the baggage handling areas. This plastering is affected by details at the exterior openings into the building.

### **Escalator Installation**

Escalator installation will take from two to three months to complete. Therefore, it is absolutely critical that this work be started almost immediately if it is to be done in time to meet our current completion commitments. Everyone is well aware of the problem and efforts are being made to expedite the work.

**Monitoring Report #27**  
**Metropolitan Airport**  
**1-10-74**  
**Page five**

**RALPH J. STEPHENSON, P. E.**  
**CONSULTING ENGINEER**

### **Deliveries**

Deliveries on most difficult-to-get items are being resolved and are generally in accordance with our assumptions at the planning meeting of December 14, 1973. Carpet is still due in the middle of March and it still is the major restraint on total completion of the entire project. Apparently the matter of plastic covered doors is pretty well solved and these should be on the job shortly.

### **Leased Areas**

The leased areas at the mezzanine level are very near to being in good enough shape so tenant work could begin. There still is no word on the leased food and drink concession areas. This is going to be a critical problem area, primarily because much of the work installed in these areas at the lounge level will be in the ceiling at the mezzanine level.

Much of the pressure at the federal inspection areas has been taken off by assignment of the counter work to the general contractor. Therefore, presently there seems to be no major problem with installation of the customs service sections of the building.

### **General Summary**

Overall the project is slightly behind the updated network of December 14, 1973 primarily at the lounge level in painting and ceiling installation. However, the job feels presently as though it may be able to pick up tempo and be moved ahead more rapidly than in the past over the next several weeks. Heat is on and many of the finish items that are essential to the job are on the job, ready to be put in place. Of prime importance is resolution of the ceiling problem at the lounge and the immediate start of ceiling work so that the electrician can begin his branch wiring and electrical fixture installation.

Still very critical to the job is the delivery of carpet and the resolution of the type L light fixture.

**Ralph J. Stephenson, P.E.**

**RJS/m**

**To: Messrs. Samuels, Kania, Van Dusen,  
Hafer, Van Nuck, Bishop**

January 21, 1974

**Subject: Monitoring Report #28**

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

**Project: 72:64 -**

**Date of Monitoring: January 16, 1974 (working day 266)**

**Monitored from Updated Issue #2 dated December 14, 1973**

**Present Target Completion Date: April 1, 1974 (working day 319)**

**Working Days Remaining: 53**

**Actions taken:**

- Participated in special construction conference

**General Summary**

This meeting was for the purpose of reviewing present job status and determining, in light of present delivery problems, what revised date should be submitted to the Board for consideration. There are several problem areas still remaining on the project that appear to be difficult of resolution. These include:

- Carpet delivery (presently scheduled to begin April 15, 1974, working day 329, and be completed by May 8, 1974, working day 346)
- L type light fixtures (to begin delivery March 1, 1974, working day 298, and be completed March 8, 1974, working day 303)
- Remainder of roofing
- Delivery of vertical lift doors in the west wall at baggage handling area on apron level
- Installation of glass
- Completion of finish work at canopy
- Leasing of eating and drinking tenant spaces

The initial portion of the meeting was devoted to an analysis of the presently committed dates as above on carpeting and L type light fixtures. If carpet is shipped by April 15, we can assume it will arrive at the job on or about April 22, 1974 (working day 334). Adding one month or 22 working days for installation brings carpet to a completion point on May 22, 1974 (working day 356). This is slightly past the latest shipping point of the remainder of the carpet and should allow adequate time for installation provided no major delay is encountered in either beginning deliveries on April 15th or in transporting the carpet from the factory to Detroit. Transportation routes should be checked and every effort made now to expedite deliveries to the greatest extent possible.

The L type light fixtures are scheduled to be shipped on March 1, 1974 (working day 298) with delivery assumed on the job site by about March 15, 1974 (working day 308). The general contractor feels that with a five day lead time on fixtures starting at March 15, he can begin installation of the slat ceiling at the lounge area. This would be on March 22, 1974 (working day 313). Assuming a 30 day installation time for slats, (this appears to be a very conservative time estimate), brings completion of slats at the lounge level to May 3, 1974 (working day 343). Thus, working within these two critical dates, May 22, 1974 and May 3, 1974 it was decided to establish a current target for total completion of the project by May 22, 1974 (working day 356). This figure will not be taken to the Board until after our next meeting on Monday, January 28, 1974 so as to further confirm information about critical deliveries.

Following this analysis, we examined other potentially tight areas. The tenant work was reviewed in some depth and it was decided that basically the air line office space at the mezzanine level would be completely available for tenant work to start on February 13, 1974 (working day 288). It was also decided that the freight elevator would be complete by February 6, 1974 (working day 281). Counter work at the FIS areas has now been let to the building general contractor and he reviewed his need to get commitments on counter work which was just recently let. Delivery dates on counter fabrication will be available by our next meeting or earlier.

The major tenant problem is encountered in the food and drink spaces. The major location for these is at the lounge level over some of the tenant spaces at the mezzanine level. Critical consideration must be given to protecting this space subsequent to opening of the facility if an eating and drinking tenant has not yet been installed in the space above. Even more important, consideration must be given as to how mechanical piping at the ceiling of the mezzanine below the food and drink area is to be installed without

Monitoring Report #28  
Metropolitan Airport  
1-21-74  
Page three

RALPH J. STEPHENSON, P.E.  
CONSULTING ENGINEER

major disruption of the tenant spaces in these locations at the mezzanine level. I urge that continuous attention and expediting be given to the consummation of definite arrangements for the food and drink spaces, particularly at the lounge level. This was discussed in detail at the meeting and should be a part of any discussion of extension on dates and interim occupancy commitments.

We then next discussed the problem of roofing and this matter is still of serious concern since commitments are not yet available on the type of roof system to be used. The problem has been availability of materials and the owner, the architect/engineer and the contractor agreed to continue giving this matter high priority attention. Installation of glass also poses a problem, the basic difficulty here being in the connection of the glass frame to the structure. Minor disagreements about setting blocks and sealant have been resolved according to those at the meeting. Interference problems with the light fixtures at the lounge have been settled as have the waterproofing details under ceramic tile.

The plastering work to be done at the west wall of the apron level baggage handling area must wait on delivery and installation of the vertical lift doors. Presently these doors have a 15 week or 75 working day delivery from today which brings them on the job about May 1, 1974 (working day 341). Adding another two to four weeks for completion of mechanical work, plastering and acoustic work would put the completion of this area past our present target completion consideration date of May 22, 1974 (working day 356). The general contractor is to make every effort to expedite deliveries of the doors so that this delay can be minimized.

So far as the passenger loading tunnels are concerned, this matter will be brought up to the Board tomorrow and hopefully a decision made so fabrication can begin immediately. This also remains a critical element of the project.

The next special construction meeting will be held Monday, January 28, 1974, at 1:30 P.M. Decisions and resolution of the above pending matters should be made to the highest degree possible prior to this conference.

Ralph J. Stephenson, P.E.

RJS/m

To: Messrs. Samuels, Kania, Van Deusen,  
Hafer, Van Nuck, Bishop

January 31, 1974

**Subject:** Monitoring Report #29

New International Terminal  
Metropolitan Airport  
Detroit, Michigan

**Project:** 72164 - F

**Date of Monitoring:** January 28, 1974 (working day 274)

**Monitored from Updated Issue #2 dated December 14, 1973**

**Present Target Completion Date:** April 1, 1974 (working day 319)

**Working Days Remaining:** 45

**Actions taken:**

- Inspected project
- Reviewed job progress with Mr. Van Nuck, Mr. Bishop and Mr. Kania and Mr. Renton
- Evaluated job progress

**General Summary**

This monitoring was primarily for the purpose of reviewing the job with key contractor and owner staff members prior to a special construction conference in the afternoon. Due to a conflict I was unable to attend this conference but discussed the project status in detail with Mr. Kania for his information at the meeting.

We first reviewed the items outstanding as listed in Monitoring Report #28. These are as follows:

- Carpet delivery (presently scheduled to begin April 15, 1974, working day 329, and be completed by May 8, 1974, working day 346)
- L type light fixtures (to begin delivery March 1, 1974, working day 298, and be completed March 8, 1974, working day 303)

- **Remalader of roofing** - It appears that we may have enough roofing material to complete the entire project. In any event, as soon as weather clears, it is the intent to completely roof the main building minus concourses at the earliest possible date.  
  
Roofing has apparently faded as a critical problem except as it is affected by weather. However, since the main building is substantially closed, this does not pose as serious a potential problem as it did previously.
- **Vertical lift doors in west wall at baggage handling area** - Delivery has been improved on these doors and they may be on the job as early as the first part of March. This would moderate the problem at this wall.
- **Installation of glass** - Glass installation is now proceeding well and all problems appear to be resolved
- **Completion of finish work at canopy** - Due to the mild weather, canopy roofing is proceeding. However, excessive precipitation has delayed the work. No major long range problem.
- **Leasing of eating and drinking tenant spaces** - There still is no owner word on this and again I suggest that this be followed intensively since the impact of installing this work will be felt both at the lounge level space and in the mezzanine ceiling space underneath the tenant areas.

**Monitoring Report #29  
Metropolitan Airport  
1-31-74  
Page three**

**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

**Present lags on the project in accordance with the updated Issue #2 dated December 14, 1973 are as follows:**

<u>Location</u>	<u>Target Completion</u>	<u>Current Lag</u>
South Mezzanine (SM)	Jan. 30, 1974 (w/d 276)	4 working days
Center Mezzanine (CM)	Feb. 8, 1974 (w/d 283)	14 working days
North Mezzanine (NM)	Feb. 11, 1974 (w/d 284)	9 working days
South Lounge (SL) **	Feb. 26, 1974 (w/d 295)	0 working days
Center Lounge (CL) **	Mar. 8, 1974 (w/d 303)	0 working days
North Lounge (NL) **	Mar. 22, 1974 (w/d 313)	0 working days

**\*\*(However, at the lounge delivery of L type light fixtures and making resinous column and beam cover corrections will delay this work beyond the Issue #2 target.)**

South Apron (SA)	Mar. 13, 1974 (w/d 306)	0 working days
Center Apron (CA)	Mar. 26, 1974 (w/d 315)	0 working days
North Apron (NA)	Apr. 15, 1974 (w/d 329)	0 working days
Overall	Apr. 24, 1974 (w/d 336)	21 working days

**This lag is due primarily to the late delivery of carpet and to a certain extent late delivery of L type light fixtures and other such items)**

**Flight Stations - Structural work is nearing completion on these and interior rough work is now underway. As soon as the flight station and concourse areas can be roofed, it will be possible to start interior finish work. Presently it appears that flight stations will be available by the target completion dates presently projected.**

**The unloading ramps for the flight stations have been ordered and are due on the job the last week in March. By the end of April all loading bridges should be operative.**



**Monitoring Report #29**  
**Metropolitan Airport**  
**1-31-74**  
**Page four**

**RALPH J. STEPHENSON, P. E.**  
**CONSULTING ENGINEER**

**General**

It seems that most of the major delay problems to the project have now been relatively well ironed out and the job is on the road to completion. There are still some areas that have to be watched carefully including leasing of food and drink spaces, plastering at the apron area, escalator installation, elevator installation, critical deliveries and turnover of the mezzanine level airline space by February 15, 1974 (working day 288).

Also, work at the flight stations and concourses must be followed carefully and integrated closely with exterior site work to insure that they are all brought home together.

I recommend that we now accept the target completion date of May 22, 1974 (working day 357) as the official target date recommended to the Board. In addition, I feel we can safely recommend the mezzanine level airline offices be made available for tenant work by February 15, 1974 (working day 288).

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Richard Samuels  
Mr. Robert Fania  
Mr. Charles Van Deusen  
Mr. Kenneth Hafer  
Mr. Wally Van Nuck  
Mr. Roy Bishop

**March 4, 1974**

**Subject: Monitoring Report #30**

**New International Terminal  
Metropolitan Airport  
Detroit, Michigan**

**Project: 72:64 - F**

**Date of Monitoring: February 26, 1974 (working day 295)**

**Monitored from updated Issue #2 dated December 14, 1973**

**Present Target Completion Date: Major Building Work - April 1, 1974  
(working day 319)**

**Total Completion - May 22, 1974  
(ready for full operation) (working day 357)**

**Working Days remaining to April 1, 1974: 24 working days**

**Working Days remaining to May 22, 1974: 62 working days**

**Actions taken:**

- Inspected project
- Participated in special construction meeting
- Evaluated job progress

**General Summary**

**The project was monitored from the updated Issue #2 dated December 14, 1973 in relation to each major section. A detailed review of each area is given below:**

**South Magazine (SM)**

**Work has moved reasonably well here and presently painting is in work. Interior doors and hardware have been substantially installed. Ceiling and light fixtures are practically complete.**

**Monitoring Report #19  
Metropolitan Airport  
1-4-74  
Page two**

**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

**Central Mezzanine (CM)**

**This area is in substantially the same position as the south mezzanine with the exception that there has been some resilient tile laid at the tenant areas.**

**North Mezzanine (NM)**

**The north mezzanine is substantially in the same progress position as is the south mezzanine.**

**South Lounge (SL)**

**It should be noted here that the sequence of ceiling installation is moving from the north to the south and that the area furthest along presently is at the north. At the south lounge, slat ceiling carriers are well in work and being completed. Very little other finish work that is slated to be going concurrently with installation of the slat ceiling is presently in work.**

**This points up a problem that should be watched carefully at the present time. The present pattern of finish work on the entire job is such that all areas are at relatively the same point with the possible exception of the apron level. Thus, there are many unfinished spaces which will have to be all brought down to the wire concurrently. This is an extremely difficult technique to manage on a project of this size and I strongly suggest that a sequence of finishing be set now that allows the contractors to complete and move out of an area, and lock it up where possible. This is especially true at the mezzanine and apron areas. It may be more difficult at the the lounge. However to the greatest extent possible, all areas should be finished in progressive fashion.**

**Center Lounge (CL)**

**Here the slat ceiling carriers are well along and awaiting light fixtures. Finish work on the center stair and escalator is moving reasonably well and it appears presently that this escalator work will be complete by the target date.**

**North Lounge (NL)**

**Type L light fixtures are beginning to arrive on the job and with slat ceilings are now being installed at the north area.**

**Monitoring Report #30  
Metropolitan Airport  
3-4-74  
Page three**

**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

### **South Apron (SA)**

The low ceiling acoustic grid is well along here with light fixtures and some diffusers being in place. High areas have been putty coat plastered and primed. Slat ceiling carriers are just being installed.

### **Central Apron (CA)**

Here plaster work is midway through putty coating, some painting has been done and most areas are slightly less finished than at the south end.

It should be noted that the area under the escalator is an unfinished area, being presently issued on a bulletin.

### **North Apron (NA)**

Here brown coating has just been completed and putty coating is underway. Slat ceiling work in the north apron has not yet begun totally. Work is proceeding well on conveyor installation.

### **Flight Stations**

Flight station work appears to have slowed over the last month and I suggest that strong attention be paid immediately to completing the structure and close-in on the central flight station and especially concentrating on interior work at the north and south concourses and flight stations. Roofing has still not been applied at these areas and undoubtedly will cause some delays to installation of finish trades. It is critical that these flight stations be completed concurrently with the main building.

### **General Summary**

Overall, measuring the project against the current target major item completion date of April 1st, it is entirely feasible this date can be met, minus items that have been delayed due to reasons generally considered beyond normal control. Some of these items are:

- Slat ceilings
- L type light fixtures
- Carpet
- Food and drink tenant areas
- Vertical lift doors
- Custom area counters

Page four

- Loading bridges
- Johnson control systems
- Ticket counters
- Federal inspection services millwork
- Signs and supporting elements
- Exterior sidewalks
- Plaster soffits at the canopies
- Ballistic work currently being processed
- Doors

Although this is not a complete list of elements that tend to delay the job, it represents a cross section of the problem sections. Overall, with the exception of those, the building should be ready early in April. The present completion target of May 22, 1974 (working day 357) should be able to be held as an operational date provided no major complications are encountered.

It should be pointed out that because most areas are in substantially the same finish progress position that it is going to be critical to sequence out in a more definitive work pattern than visible now. I strongly recommend that the contractor, the architect and the owner work carefully together to allow areas to be finished and punched out on a progressive basis.

It should also be recognized that such things as ceramic tile, painting, installation of toilet room plumbing fixtures, partitions and accessories are all items that are going to have to be expedited to the greatest extent possible. Ceramic tile presently is showing a marked tendency to lag at the mezzanine level and every effort should be made to complete toilet room work and get this trade off the job.

It should also be recognized that now is the point at which many finish items are going to have to be brought on the job and protected. This is one of the reasons why we should take care to finish on a progressive basis so that installed work can be protected properly.

Every effort is being made presently to obtain carpet at an earlier date than scheduled. There are signs that the carpet market has softened and if possible, an earlier delivery will be obtained.

Another item that may cause some long term problems is the bi-fold doors at the baggage handling areas. These are not expected on the job until May 1, 1974 but it is entirely possible the contractors can work around those to install the system.

**Monitoring Report #30  
Metropolitan Airport  
3-4-74  
Page five**

**RALPH J. STEPHENSON, P. E.  
CONSULTING ENGINEER**

**Another critical element is the Simplex security elements. Shop drawings have been received and should be returned promptly.**

**Ralph J. Stephenson, P. E.**

**RJS/m**

**To: Mr. Richard Samuels  
Mr. Robert Kania  
Mr. Charles Van Dusen  
Mr. Kenneth Hafer  
Mr. Wally Van Nuck  
Mr. Roy Bishop**