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REPORT ON OPERATIONS OF WILLOW RUN AIRPORT  
AND  
RECOMMENDATIONS FOR FUTURE ACTION

TO

WILLOW RUN AIRPORT COMMISSION

BY

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Final Report

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## EXECUTIVE SUMMARY

This report to the WRAC analyzes the operations at WRA, forecasts WRA operations in the future under a variety of conditions and provides a series of recommendations which will minimize risk and increase potential WRA revenue.

WRA operations have stable areas (e.g., total operating expenses, rental revenues and the reserve fund) and highly volatile areas (e.g., the air cargo related areas). In addition, the future owners of WRA will most certainly face increased maintenance costs and perhaps some capital expenditures.

The pro forma projection of the "middle case" assumption indicates some risk in assuming control of WRA. However, this risk can be offset to a degree by gradually increasing revenue in the "stable" area (i.e., rents) and by encouraging air cargo operations at WRA. Also, the reserve fund at WRA provides a significant "cushion" against potential risks. An effort should also be initiated to promote new revenue producing activities, e.g., an industrial park, a restaurant or other commercial enterprises. Finally, it should be recognized that success in running WRA is partially a managerial question. The WRAC must be an active and interested board and must conduct a systematic and thorough search for a vigorous and imaginative Airport Director and for other persons in the new management team.

## INTRODUCTION

This report deals specifically with the operations of Willow Run Airport (WRA). The various indicators of these operations have been analyzed in some detail for the Willow Run Airport Commission (WRAC). One goal of this report is to "take apart" the various figures relating to WRA and highlight the important characteristics of WRA's operations. Another objective of this report is to forecast a probable future for WRA as well as different, less likely, futures. A final goal of this report is to recommend to the WRAC a strategy--a plan of attack--for the decision of whether or not to take over WRA.

In this report the critical factors of WRA's operations have been pinpointed. They include the existence of a large amount of stability in much of WRA's operations, the volatility of air cargo operations and the possibility of some capital expenditures in the future. A probable future, a "middle case" pro forma statement, is presented (as well as less probable "worst case" and "best case" pro forma statements), as well as a cash flow analysis under this "middle case." Indeed, such forecasts do show there is some risk in assuming control of WRA but such risks appear manageable and there are opportunities as well. Finally, a strategy--a set of recommendations--is offered in order to minimize the risk and facilitate a successful investment for the WRAC.

THE STABLE COMPONENTS OF RECENT OPERATIONS AT  
WILLOW RUN AIRPORT

One of the most significant aspects of recent operations at WRA is the remarkable stability of many key components of these operations. An examination of Table I, giving the total operating expenses at WRA between FY 1969 and FY 1975, shows that total operating expenses have fluctuated between a high of \$1,882,303 (FY 1970) to a low of \$1,275,043 (FY 1972). For the past three fiscal years total operating expenses have hovered around \$1,800,000.

Credit for the stable total operating expenses record at WRA must be given to the present management at WRA under the direction of Mr. Robert E. Pangburn, Airport Manager. The airport has been well managed given the fact that there has been little interest in promoting WRA by its present owner, the University of Michigan. Moreover, a number of potential expenses (e.g., maintenance) have been deferred keeping expenses down.

Another stable aspect of WRA's operations is its rental revenue for recent fiscal years. Rental revenue is critical to WRA's operations since it provides a substantial amount of WRA's total revenue. The percentage of total revenue which rental revenue has provided is as follows:

|         |       |
|---------|-------|
| FY 1969 | 77.6% |
| FY 1970 | 60.1% |
| FY 1971 | 78.1% |
| FY 1972 | 69.5% |
| FY 1973 | 62.5% |
| FY 1974 | 65.8% |
| FY 1975 | 67.2% |

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Table 1

Total Operating Expenses--Willow Run Airport

| <u>Year Ending</u><br><u>June 30</u> |             |
|--------------------------------------|-------------|
| 1969                                 | \$1,472,984 |
| 1970                                 | 1,882,303   |
| 1971                                 | 1,628,361   |
| 1972                                 | 1,275,043   |
| 1973                                 | 1,765,045   |
| 1974                                 | 1,779,648   |
| 1975                                 | 1,811,320   |

Source: Airport records

Table 2 shows that, with the exception of FY 1972 (when Universal went bankrupt), rental revenue at WRA has remained in the \$1,130,000-\$1,300,000 range for the fiscal years 1969-1975. In fact, rental revenue has increased somewhat to a high of about \$1,300,000 for FY 1974 and FY 1975. However, this stable and even gradual increase in rental revenues may not continue. The ERIM rental revenue to WRA amounting to \$275,138.87 for FY 1975 will cease when the University of Michigan relinquishes control of WRA. An important task for the new owners of WRA, then, will be to fill the void in rental revenues created by the loss of rentals from ERIM in order to maintain the recent stability in rental revenue income at WRA.

Another remarkably stable component of WRA's recent operations has been the level of the reserve fund for repairs and replacements. This item is crucial to the running of WRA since it provides a "cushion" in the event of a sudden decline in revenue or upsurge in operating expenses. Moreover, it can be used for emergency repairs and replacements needed at WRA. Table 3 shows that this reserve fund has remained at \$589,684.44 for the past two fiscal years. It has never gone above \$608,000 nor below \$568,000 in the past seven fiscal years. The WRAC must make every effort to secure this reserve fund before it takes possession of WRA.

Another interesting point about the reserve is that it generates some revenue through investments which amounted to about 2% of total revenue for FY 1975. However, as seen in Table 4, the return-on-investment (ROI) from this reserve fund has fluctuated between 4.9% and 7.0% during the past six fiscal years. It would be desirable for the WRAC to obtain the services of a skilled and prudent money manager to direct the investment of this reserve fund to avoid wild downturns in the investment revenue and to increase gradually the ROI yield.

Table 2

Rental Revenue<sup>1</sup> -- Willow Run Airport

| <u>Year Ending</u><br><u>June 30</u> |                      |
|--------------------------------------|----------------------|
| 1969                                 | \$1,143,581          |
| 1970                                 | 1,131,929            |
| 1971                                 | 1,279,871            |
| 1972                                 | 886,792 <sup>2</sup> |
| 1973                                 | 1,103,627            |
| 1974                                 | 1,300,330            |
| 1975                                 | 1,300,302            |

1. University plus other rentals
2. Year of Universal's bankruptcy



Table 3

Willow Run Airport

Reserves for Repairs and Replacements

| <u>Fiscal Year</u> |              |
|--------------------|--------------|
| 68-69              | \$607,276.65 |
| 69-70              | \$569,485.57 |
| 70-71              | \$583,146.03 |
| 71-72              | \$584,939.86 |
| 72-73              | \$584,936.86 |
| 73-74              | \$589,684.44 |
| 74-75              | \$589,684.44 |

Table 4

Investment Income From Reserve Fund and ROI

| <u>Fiscal Year</u> | <u>Investment Income</u> | <u>Return on Investment</u> <sup>1</sup> |
|--------------------|--------------------------|--|
| 1970               | \$37,913.68              | 6.2%                                     |
| 1971               | \$28,514.22              | 5%                                       |
| 1972               | \$31,276.15              | 5.4%                                     |
| 1973               | \$28,445.47              | 4.9%                                     |
| 1974               | \$41,123.55              | 7%                                       |
| 1975               | \$36,855.28              | 6.2%                                     |

<sup>1</sup>ROI = Investment Income ÷ Reserve Fund at end of previous fiscal year

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Conclusions

The stability of significant components of WRA's operations is important for the WRAC. The long-run stability of expenses indicate that the airport is presently well-run given external constraints. Expenses therefore will probably continue at the present and gradually increasing level if no large-scale capital expenditures are required and disregarding for the moment any other increased costs (e.g., maintenance). The stability of the rental revenue at a high level (consistently over 60% of total airport revenue) must be maintained. In addition, the stability of the reserve fund around \$580,000 is important to maintain as a "cushion" for emergencies or surprises.

This stable character of much of WRA's operations indicates that the degrees of freedom for managers in such areas may not be very great. Normal operating expenses will probably be rather level or perhaps increase gradually. Rental income will also probably be level (if the ERIM rental revenue can be replaced). The reserve fund will probably continue to exist basically for emergencies and thereby help maintain level amounts in these stable areas. Finally, this stability in much of WRA's operations means that the WRAC must examine critical areas which are more volatile and subject to change.

THE AIR CARGO OPERATION AT WILLOW RUN AIRPORT

Although Willow Run has over 100 general aviation based aircraft, making it an important airport in that category, nevertheless its major function is to serve the carriers moving emergency shipments of automobile parts for Ford, General Motors and Chrysler. In the record year of 1973 a total of 234.7 million pounds of air cargo moved in and out of Willow Run as seen in Table 5. Furthermore, Table 6 indicates that revenues to the airport which are derived from the air cargo operation are becoming an increasingly significant percentage of total revenues, averaging 30.9% in the fiscal years 1973 through 1975.

Because of the importance of this source of revenue it is important to understand its structure.

The Air Cargo Operators at Willow Run

Zantop is a Part 121 carrier with a mixed fleet of Electras, Corvair 640's (Dart turbo-props) and DC-6A's. It flies parts to the assembly plants of all three automobile manufacturers--Chrysler, Ford and General Motors. Zantop is the largest air cargo operator using Willow Run Airport.

Rosenbalm is also a Part 121 carrier, a new operator, with one DC-8 and six DC-6's. He also services all the automobile manufacturers.

Overseas National is a supplemental carrier serving Ford only using DC-9's--currently two flights a day.

Saturn is also a supplemental carrier serving Emery Air Freight (a freight forwarder) with Electras.

Transcontinental is a new Part 121 carrier serving all the manufacturers with C-46 aircraft.

Table 5

Operations of Air Cargo Aircraft and Pounds of Air Cargo Handled

| <u>Calendar Year</u> | <u>Air Carrier Operations</u> <sup>1</sup> | <u>Air Taxi Operations</u> <sup>2</sup> | <u>Total</u> | <u>Air Cargo (million lbs)</u> | <u>% Change</u> |
|----------------------|--|---|--------------|--------------------------------|-----------------|
| 1967                 | 7,499                                      | --                                      | 7,499        | 69.1                           | +115.2          |
| 1968                 | 16,357                                     | --                                      | 16,357       | 148.7                          | -43.3           |
| 1969                 | 9,404                                      | --                                      | 9,404        | 84.3                           | +0.8            |
| 1970                 | 9,319                                      | --                                      | 9,319        | 85.0 (+)                       |                 |
| 1971                 | 5,741                                      | 690                                     | 6,431        | NA                             |                 |
| 1972                 | 4,284                                      | 8,050                                   | 12,334       | NA                             |                 |
| 1973                 | 8,140                                      | 24,851                                  | 32,991       | 234.7                          |                 |
| 1974                 | 4,153                                      | 24,652                                  | 28,804       | 205.3                          | -12.5           |
|                      | First 8 months 1974                        |   |              | 145.4                          |                 |
|                      | First 8 months 1975                        |   |              | 45.2                           | -76.9           |

1. Supplemental carriers: Saturn, ONA, Southern, McCulloch
2. Part 121 (non-certified) carriers: Zantop, Shamrock, Ortner, Rosenbalm. There may be a few passenger flights included in the "air taxi" category.

Source: Airport records

Table 6

Cargo-Oriented Revenues--Willow Run Airport

| <u>Year<br/>Ending<br/>June 30</u> | <u>Airfield<sup>1</sup><br/>Revenue</u> | <u>Fuel<sup>2</sup></u> | <u>Total<br/>Airfield<br/>Revenue</u> | <u>Airfield as %<br/>of Total<br/>Revenue</u> |
|------------------------------------|---|-------------------------|---------------------------------------|---|
| 1969                               | \$206,484                               | \$47,501                | \$253,985                             | 17.2%   |
| 1970                               | 180,921                                 | 40,199                  | 221,120                               | 11.7  |
| 1971                               | 199,192                                 | 48,245                  | 247,437                               | 15.1  |
| 1972                               | 174,816                                 | 34,657                  | 209,473                               | 16.4  |
| 1973                               | 514,909                                 | 68,592                  | 583,501                               | 33.1  |
| 1974                               | 273,514                                 | 348,701                 | 622,215                               | 31.5  |
| 1975                               | 206,691                                 | 257,908                 | 464,599                               | 28.2  |

1. Landing fees at 30¢/1,000 lbs. maximum landing weight, for for-hire-and-reward flights only plus 2¢/gallon fuel pumping through 1973 after which time this revenue was included in "Fuel" revenue.
2. Fuel flowage (storage) at 6 mills/gallon through 1973 at which time fuel pumping revenues were added.

Source: Airport records

Auto Air Cargo acts as a freight forwarder for all the carriers except Zantop.

The two largest air cargo operators at Willow Run are Zantop and Auto-Air. Table 7 shows the absolute and relative size of these two firms in terms of cargo moved. Zantop at present moves about 1 2/3 as much as Auto-Air.

#### The Nature of the Business

None of the three manufacturers plan to use air cargo as a routine form of shipment--there are not even planned emergencies. In fact, when interviewed, one of the automobile manufacturers vigorously minimized the role of air cargo in the automobile business. However, air cargo is part of the automobile industry's operations in dealing with critical shortage situations. As seen in Table 8, all three major automobile manufacturers use the operators at Willow Run. Further, the ratio of inbound to outbound air cargo at Willow Run is increasing. In 1972, the amount of inbound cargo was 30% of the amount of outbound cargo shipped at Willow Run. In 1975 (January through August), the amount of inbound cargo had grown to 60% of the amount of outbound cargo shipped at Willow Run.

Air cargo movements vary very much from day to day and fluctuate wildly with the prosperity, or otherwise, of the automobile industry. Air cargo is even more volatile than the industry as a whole. Whereas the sales of domestic built cars were down 15.2% in the period ending September 20, 1975, versus the same period for 1974, air cargo at Willow Run for a similar period was down 76.9%.

The fact that the automobile manufacturers rely on the non-scheduled air service available at Willow Run on short notice, plus the fact that they cannot plan ahead to use such services, is well documented

Table 7

Air Cargo Movement at Willow Run Airport for Two Firms

(in thousands of pounds)

|                    | <u>Auto-Air</u> | <u>Zantop</u> |
|--------------------|-----------------|---------------|
| July-December 1972 | 26,601          | 18,760        |
| January-July 1973  | 37,727          | 37,606        |
| July-December 1973 | 66,565          | 84,277        |
| January-June 1974  | 28,024          | 41,895        |
| July-December 1974 | 43,018          | 82,410        |
| January-June 1975  | 19,450          | 15,251        |



Table 8

Comparative Air Cargo Usage by Firm at  
Willow Run Airport for One Air Cargo Operator

1972 (July through December)

|                | <u>Outbound</u> | <u>Incoming</u> |
|----------------|-----------------|-----------------|
| General Motors | 31%             | 31%             |
| Ford           | 21%             | 47%             |
| Chrysler       | 47%             | 22%             |
| Other          | 1%              | --              |
| Total          | 100%            | 100%            |

Note: Amount of inbound cargo was 30% of the amount of  
outbound cargo

1973 (Calendar Year)

|                | <u>Outbound</u> | <u>Incoming</u> |
|----------------|-----------------|-----------------|
| General Motors | 38%             | 44%             |
| Ford           | 18%             | 33%             |
| Chrysler       | 42%             | 23%             |
| Other          | 2%              | --              |
| Total          | 100%            | 100%            |

Note: Amount of inbound cargo was 50% of the amount of  
outbound cargo

Table 8 (continued)

1974 (Calendar Year)

|                | <u>Outbound</u> | <u>Incoming</u> |
|----------------|-----------------|-----------------|
| General Motors | 30%             | 35%             |
| Ford           | 32%             | 38%             |
| Chrysler       | 37%             | 23%             |
| Other          | 1%              | 4%              |
| Total          | 100%            | 100%            |

Note: Amount of incoming cargo was 55% of the amount of  
outbound cargo.

1975 (January through August)

|                | <u>Outbound</u> | <u>Incoming</u> |
|----------------|-----------------|-----------------|
| General Motors | 40%             | 52%             |
| Ford           | 26%             | 25%             |
| Chrysler       | 34%             | 23%             |
| Other          | --              | --              |
| Total          | 100%            | 100%            |

Note: Amount of incoming cargo was 60% of the amount of  
outbound cargo.

in their testimony in the "Automotive Cargo Investigation" case hearing held by the Civil Aeronautics Board in August of 1974 (Docket Nos. 24122 et al.). Here are some paraphrased examples:

Mr. George R. Hatfield, Supervisor of Freight Route Analysis and Operation, Chrysler Corporation

Chrysler has little or no warehouse capability from which to supply its assembly plants, and problems arise such as:

- Suppliers go on strike
- Rail cars are not supplied or are delayed
- Trucks break down

Daily conferences are held to decide how to deal with these recurring emergencies so as to ensure "a continual flow of material into the assembly plant."

Hatfield stated, "Our (Chrysler's) needs, of course, are primarily for the carriers such as Zantop."

Question to Hatfield: "Can you forecast what type of what size of aircraft, cargo door, and one thing and another you need from day to day?"

Hatfield: "No, sir."

Mr. Aden C. Adams, Manager of Material Transportation Department, Automotive Assembly Division, Ford Motor Company

This Division makes the greatest use of air cargo--\$20 million in 1972, and \$60 million in 1973.

There are no planned air movements.

Air is used as a result of errors or mistakes:

- Derailments
- Truck breakdown
- Cyclical loss in the plant

- Quality control problems
- Stock loss or shipping discrepancy

It fluctuates widely. It is cyclical within a year, a month, or even a week. It is extremely difficult to forecast. It is planned that everything go by rail or truck, but air is a very valuable service. It is price inelastic, but it is not certain that paying higher rates would result in more capacity at Willow Run. There is a back haul but it is less and moves at lower rates.

Nothing that is shipped is programmed to move by air. The requirement for air transportation has increased partly because the complexity of automobiles has increased. The bulk of the flights move between midnight and 6:00 a.m. Ford now has no contract with Zantop although one has been discussed periodically. Since Universal's bankruptcy (a former air cargo operator), other three- or four-month contracts have been considered. However, a long term contract has not been considered because emergencies are not forecastable.

Mr. Robert E. Hatfield, Director of Traffic of the GM Assembly Division of General Motors

The GM Assembly Division does over \$20 million of air cargo business a year.

Fifty per cent of total tonnage moves by rail, and the second biggest mode is truck. However air is a "substantial" percentage of the total.

About 100 million pounds a year move by air:

- 56 million pounds from Detroit
- 35 million pounds from Cleveland
- 9 1/2 million pounds from Chicago

Over half of the total goes by the scheduled carriers (i.e., not by the air cargo operators that fly in and out of Willow Run).

Air shipment is used when:

- There is a failure of rail or any other mode
- The supplier is behind schedule
- There are weather delays
- It is necessary to protect production

Air transportation is "time" rather than "cost" sensitive. Between all three categories of carrier--scheduled, supplemental and Part 121-- there is adequate airlift available.

Hatfield stated, "Well, I think our people are always mindful of air transportation, in our terminology, what we call a premium mode. It is just a general policy to try to keep this at a minimum."

\* \* \* \*

#### Summary

- Air cargo revenues are vital to the viability of Willow Run Airport, at least in the next few years until other sources of revenue can be tapped.
- The supplemental and Part 121 carriers operating out of Willow Run perform valuable services for the automobile manufacturers, and are often the first choice when these manufacturers resort to air transportation. However the use of air transportation is never planned; it is only an emergency resource.
- However the automobile manufacturers do have some other options for air cargo, namely the scheduled carriers operating out of Detroit Metropolitan, and the air taxi operators operating out of Detroit City Airport.

- Furthermore, the carriage of automobile parts by air is highly cyclical, volatile and very hard to predict. Though vital to Willow Run, air cargo revenues are highly unreliable.

Recommendations

- Every effort should be made to ensure that the air cargo operators at Willow Run be provided with facilities which will in fact facilitate their operations under their own special circumstances. These airlines go from feast one day to famine the next and they must have the flexibility to deal with these fluctuations.
- In terms of the airport this means adequate aircraft and truck parking space, and ample terminal areas. The good offices of the airport should also be used to help the operators obtain contracts with the automobile manufacturers so that the operators' business can be stabilized, and air cargo revenues to the airport be more certain.

FUTURE CAPITAL EXPENDITURES AND INCREASED MAINTENANCE AT  
WILLOW RUN AIRPORT

The most important "surprise" item for the WRAC as potential owners of WRA, outside of air cargo developments, is the future need for large-scale capital expenditures. Clearly, the need for capital expenditures, along with air cargo demand, will "make or break" profitable or even breakeven management of WRA.

Robert E. Pangburn, Airport Manager of WRA, explicitly focused attention on the critical aspect of future capital expenditures at WRA in his memorandum of June 10, 1973. He estimated at that time that total necessary capital expenditures over a ten year period would amount to approximately \$10 million or about \$1 million per year. Mr. Pangburn's complete estimates are given in Table 9.

The importance of Mr. Pangburn's memo, however, is not the actual estimate but rather that it called attention to the key area of future need for large-scale capital expenditures. Moreover, some of the anticipated capital expenditures would not become the burden of the actual WRA owners since they are eligible for Federal and state government financing. A preliminary examination of the items listed on the June 10, 1973 memo reveals the following:

1. Airfield Concrete Resurfacing or Replacement. Of the estimated \$4,200,000.00, 75% is eligible for FAA funding under the ADAP program and 12 1/2% for Michigan Aeronautics funding, leaving only 12 1/2% or \$525,000 to be furnished by the owners of WRA.

2. Airfield Electrical Systems, Primary Electrical Gear, Hangar Mechanical Systems and Lifting Mechanisms of Hangar Doors. These items

Table 9

Estimates by Robert E. Pangburn in His Memo of 6/10/73

For Future Capital Expenditures for

Willow Run Airport

|   |                     |
|---|---------------------|
| 1. Airfield concrete resurfacing or replacement:  |                     |
| A. Resurface all runways to maintain strength<br>5 @ \$400,000.00   | 2,000,000.00        |
| B. Resurface taxiways   | 600,000.00          |
| C. Resurface Parking Aprons   | <u>1,600,000.00</u> |
|   | 4,200,000.00        |
| 2. Airfield Electrical Systems<br>Complete replacement of runway lighting, cables<br>and fixtures   | 400,000.00          |
| 3. Primary Electrical Gear<br>Complete replacement of obsolete switch gear, transformers,<br>regulators and emergency generating systems and cables | 2,500,000.00        |
| 4. Access Roadway Resurfacing (6 miles)   | 200,000.00          |
| 5. Renovation of Mechanical Systems in three<br>main hangar buildings   | 300,000.00          |
| 6. Renovation of Sewage Transmission System   | 250,000.00          |
| 7. Renovation of Fire Protection Systems  | 300,000.00          |
| 8. Replace Lifting Mechanisms, cables and Drums<br>Hangar Doors 16 @ \$10,000.00  | 160,000.00          |
| 9. Replace Fencing (Selected areas)   | 75,000.00           |
| 10. Renovations in Aviation Fuel Farm   | 250,000.00          |
| Operating expense subsidy for anticipated low<br>revenue periods<br>8 years @ \$150,000.00  | <u>1,200,000.00</u> |
|   | \$9,835,000.00      |



totalled \$3,360,000 in the original estimate and were therefore singled out as important areas for future capital expenditures. Consequently, an outside expert electrical contractor, A.F. Smith & Son, Inc., of the city of Ypsilanti, which is familiar with WRA, was called in to examine these items. In its letter of October 9, 1975,\* A.F. Smith & Son, Inc. estimated total capital requirements for these items at \$250,000. The contractor also stressed the importance of effective and increased maintenance in order to prevent large-scale replacement.

3. Fire Protection Systems. According to Mr. Pangburn, renovation of the fire protection systems would require \$300,000 over a ten year period. The WRA fire protection facilities were examined by Ralph Crawford, Fire Chief of the City of Ypsilanti. In his report,\* Mr. Crawford stressed the importance of maintenance. He also stated that the fire protection system at WRA will probably last 1-5 more years and recommended that a qualified fire protection engineer be consulted.

4. The Sewage Transmission System. Mr. Pangburn estimated that renovation of the WRA sewage transmission system would cost \$250,000 over a ten year period. The WRA sewage transmission system was therefore examined by D. Bruce Jones of the Ypsilanti Community Utilities Authority. In his letter of October 10, 1975\* Jones stated that the water and sewer facilities are adequate for fifty years if demand does not increase greatly.

5. Roadway Access Resurfacing. This item, estimated originally at \$200,000, cannot use ADAP funds.

6. Fuel Farm Renovations. This item, estimated at \$250,000, has not yet been examined.

7. Replace Fencing. This item, estimated originally at \$75,000, has not yet been examined.

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\* Included in this report.

Therefore, out of the original total estimate of \$9,835,000, we can exclude the following direct capital expenditures by the new WRA owners.

|  |                |
|--|----------------|
| 1. Airfield Concrete Resurfacing           |                |
| 75% of 4,200,000                           | 3,150,000      |
| 12 1/2% of 4,200,000                       | <u>525,000</u> |
|  | 3,675,000      |
| 2. Electrical, Mechanical<br>Systems, etc. | 3,110,000      |
| 3. Sewage Transmission Systems             | <u>250,000</u> |
| Total                                      | 7,035,000      |

The "operating expense subsidy" of \$1,200,000 can also be excluded from these figures. Therefore, \$8,235,000 can be eliminated from the original \$9,835,000 estimate leaving an estimated \$1,600,000 in direct capital expenditures by the new WRA owners. However \$250,000 of this estimate for the fuel farm renovations still has to be studied. In any event, the estimate for capital expenditures required by the new WRA owners has been reduced to about \$160,000 per year over a ten year period rather than the original \$1 million per year. However, the maintenance costs will necessarily have to increase in order to avoid large-scale capital expenditures in the next five to ten year period.

FIVE YEAR PRO FORMA INCOME STATEMENTS FOR  
WILLOW RUN AIRPORT

Tables 10, 11 and 12 give Five Year Pro Forma Income Statements for WRA for three different conditions: (1) "middle case," (2) "best case" and (3) "worst case." Capital expenditures are not included in these pro forma statements since it is assumed the large maintenance costs will prevent the need for capital expenditures from arising for the first five years.

The "middle case" income statement is perhaps the most reasonable. It assumes a close to average year for air cargo which will grow at five per cent per year (reflecting a mild improvement in the automobile industry). In addition, rental revenues will also grow gradually, making up in time for the loss of ERIM rentals (rental growth is projected to be 10% for the first two years and five per cent thereafter). In the expense category additional maintenance costs (i.e., in addition to the \$700,000 in maintenance costs included in the normal operating expenses item)\* is projected to increase significantly and will fluctuate at between \$200,000-\$100,000 per year. Two new items also appear in the expense. They are accounting and related costs and legal fees. Each is estimated at \$50,000 per year. The University of Michigan had previously absorbed these costs. Finally, a one-time item, transitional costs, is included in the first year expenses. This item covers the costs incurred in taking over the airport, such as executive searches, data collection and expert reports.

The "worst case" pro forma statement is given to illustrate what would happen if complete disaster struck. Rental revenue is not assumed to grow. Initial revenue from air cargo related activities is

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\* Normal operating expenses are projected to increase from \$1,800,000 to \$2,000,000 in the last three years.

Table 10

"Middle Case" Pro Forma Income Statement

|                              | <u>Year 1</u> | <u>Year 2</u> | <u>Year 3</u> | <u>Year 4</u> | <u>Year 5</u> |
|------------------------------|---------------|---------------|---------------|---------------|---------------|
| <u>REVENUE</u>               |               |               |               |               |               |
| Rental Revenue               | 1,125,000     | 1,240,000     | 1,302,000     | 1,367,000     | 1,435,000     |
| Aircraft Fuel                | 455,000       | 478,000       | 502,000       | 521,000       | 553,000       |
| Aircraft Revenue             | 207,000       | 217,000       | 228,000       | 239,000       | 251,000       |
| Sales & Service              | <u>15,000</u> | <u>15,000</u> | <u>15,000</u> | <u>15,000</u> | <u>15,000</u> |
| Total Revenue                | 1,805,000     | 1,950,000     | 2,047,000     | 2,148,000     | 2,254,000     |
| <u>EXPENSES</u>              |               |               |               |               |               |
| Normal Operating Expenses    | 1,800,000     | 1,800,000     | 2,000,000     | 2,000,000     | 2,000,000     |
| Additional Maintenance Costs | 200,000       | 100,000       | 200,000       | 100,000       | 200,000       |
| Accounting Expenses, etc.    | 50,000        | 50,000        | 50,000        | 50,000        | 50,000        |
| Legal Fees                   | 50,000        | 50,000        | 50,000        | 50,000        | 50,000        |
| Transitional Expenses        | <u>75,000</u> | <u>--</u>     | <u>--</u>     | <u>--</u>     | <u>--</u>     |
| Total Expenses               | 2,175,000     | 2,000,000     | 2,300,000     | 2,200,000     | 2,300,000     |
| Gross Profit (Loss)          | (370,000)     | (50,000)      | (253,000)     | (52,000)      | (46,000)      |

Assumptions:

- Rental revenue, minus ERIM rental revenue, grows at 10% for first two years, 5% thereafter.
- Aircraft fuel and airfield revenue grows at 5% per year.
- Additional maintenance fluctuates between \$100,000-\$200,000 per year.

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\* These amounts in Tables 10, 11 and 12 reflect the higher fuel flowage rates now in effect, i.e., 2¢ vs. 4¢ per gallon plus the previous .6¢/gallon for storage.

Table 11

"Worst Case" Pro Forma Income Statement

|                              | <u>Year 1</u> | <u>Year 2</u> | <u>Year 3</u> | <u>Year 4</u> | <u>Year 5</u> |
|------------------------------|---------------|---------------|---------------|---------------|---------------|
| <u>REVENUE</u>               |               |               |               |               |               |
| Rental Revenue               | 1,025,000     | 1,025,000     | 1,025,000     | 1,025,000     | 1,025,000     |
| Aircraft Fuel                | 151,000       | 159,000       | 166,000       | 174,000       | 183,000       |
| Airfield Revenue             | 70,000        | 75,000        | 77,000        | 81,000        | 88,000        |
| Sales & Service              | <u>15,000</u> | <u>15,000</u> | <u>1,5000</u> | <u>15,000</u> | <u>15,000</u> |
| Total Revenue                | 1,261,000     | 1,273,000     | 1,283,000     | 1,295,000     | 1,308,000     |
| <u>EXPENSES</u>              |               |               |               |               |               |
| Normal Operating Expenses    | 1,800,000     | 1,800,000     | 2,000,000     | 2,000,000     | 2,000,000     |
| Additional Maintenance Costs | 300,000       | 200,000       | 300,000       | 200,000       | 300,000       |
| Accounting Expenses, etc.    | 50,000        | 50,000        | 50,000        | 50,000        | 50,000        |
| Legal Fees                   | 50,000        | 50,000        | 50,000        | 50,000        | 50,000        |
| Transition Costs             | <u>75,000</u> | <u>--</u>     | <u>--</u>     | <u>--</u>     | <u>--</u>     |
| Total Expenses               | 2,275,000     | 2,100,000     | 2,400,000     | 2,300,000     | 2,400,000     |
| Gross Profit (Loss)          | (1,014,000)   | (837,000)     | (1,117,000)   | (1,005,000)   | (1,092,000)   |

Assumptions:

- Rental revenue, no growth, minus \$275,000 ERIM revenue.
- 33.3% of normal fuel revenue @ 4.6¢/gallon, 5% growth rate for both aircraft fuel and airfield revenue.
- Maintenance costs very high, fluctuate between \$200,000-\$300,000.

Table 12

"Best Case" Pro Forma Income Statement

|                              | <u>Year 1</u> | <u>Year 2</u> | <u>Year 3</u> | <u>Year 4</u> | <u>Year 5</u> |
|------------------------------|---------------|---------------|---------------|---------------|---------------|
| <u>REVENUE</u>               |               |               |               |               |               |
| Rental revenue               | 1,300,000     | 1,495,000     | 1,648,000     | 1,809,000     | 1,990,000     |
| Aircraft Fuel                | 617,000       | 710,000       | 781,000       | 859,000       | 944,000       |
| Airfield Revenue             | 274,000       | 315,000       | 347,000       | 381,000       | 420,000       |
| Sales & Services             | <u>15,000</u> | <u>15,000</u> | <u>15,000</u> | <u>15,000</u> | <u>15,000</u> |
| Total Revenue                | 2,206,000     | 2,520,000     | 2,788,000     | 3,075,000     | 3,369,000     |
| <u>EXPENSES</u>              |               |               |               |               |               |
| Normal Operating Expenses    | 1,800,000     | 1,800,000     | 2,000,000     | 2,000,000     | 2,000,000     |
| Additional Maintenance Costs | 100,000       | 50,000        | 100,000       | 50,000        | 100,000       |
| Accounting Expenses, etc.    | 50,000        | 50,000        | 50,000        | 50,000        | 50,000        |
| Legal Fees                   | 50,000        | 50,000        | 50,000        | 50,000        | 50,000        |
| Transitional Expenses        | <u>75,000</u> | <u>--</u>     | <u>--</u>     | <u>--</u>     | <u>--</u>     |
| Total Expenses               | 2,725,000     | 1,950,000     | 2,200,000     | 2,150,000     | 2,200,000     |
| Gross Profit (Loss)          | 131,000       | 570,000       | 588,000       | 925,000       | 1,169,000     |

Assumptions:

- Rental revenue maintains present level first year, 15% growth rate in second year and 10% growth rate thereafter.
- Aircraft fuel and airfield revenue grow 15% first two years and 10% thereafter.
- Additional maintenance fluctuates between \$50,000-\$100,000 per year.

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based on 33% of normal activity and increases only moderately thereafter (at five percent per year). On the expense side, additional maintenance costs are assumed to be very heavy, fluctuating between \$200,000-\$300,000 per year.

The "best case" pro forma, on the other hand, is based on the assumption that complete good fortune takes place. Rental revenue begins at its present level (somehow keeping ERIM or at least making up for the void ERIM would leave) and grows 15% in the second year and 10% thereafter. The air cargo related activities, aircraft fuel and airfield revenue, reflecting an upturn in the automobile industry, grow at 15% the first two years and at 10% thereafter. Moreover, the additional maintenance costs are assumed to be relatively light, fluctuating at between \$50,000-\$100,000 per year.

The profit and loss results are summarized in Table 13. The most likely situation, the "middle case" has a relatively large loss the first year, about \$370,000, and smaller losses for the second and fourth and fifth years. The "worst case" results show large losses every year. The "best case" results show increasing profits for the five year projection.

The pro forma results should be taken as indicators not absolutes. Clearly they show there is some risk involved in assuming ownership of WRA. Moreover, they point to the need of making every effort to gain control of the reserve fund at the approximate \$600,000 level and to investigate other, more imaginative, ways to generate revenue.

Table 13

Profits (Losses) for Various Pro Forma Statements

|               | <u>Year 1</u> | <u>Year 2</u> | <u>Year 3</u> | <u>Year 4</u> | <u>Year 5</u> |
|---------------|---------------|---------------|---------------|---------------|---------------|
| "Middle Case" | (370,000)     | (50,000)      | (253,000)     | (52,000)      | (46,000)      |
| "Worst Case"  | (1,014,000)   | (837,000)     | (1,117,000)   | (1,005,000)   | (1,092,000)   |
| "Best Case"   | 131,000       | 570,000       | 588,000       | 925,000       | 1,169,000     |



CASH FLOW ANALYSIS FOR WRA  
UNDER "MIDDLE CASE"

This section presents a two-year cash flow analysis of WRA under the most likely "middle case" pro forma scenario. As can be seen in Tables 14 and 15 the monthly revenue calculations are derived by allocating rental revenue evenly over each of the 12 month periods, by allocating \$1,000 of sales and service revenue to each month except the peak months of July, August and November when the revenue is estimated to be 2,000 per month. In addition, the cargo related revenues, aircraft fuel and airfield revenue, are estimated to be proportional to cargo moved in each month. Therefore, the cargo related revenue has been calculated by multiplying the percentage of cargo moved in each month (using 1973 records, see Table 18) times the total of aircraft fuel and airfield revenue (\$662,000 for year 1; \$695,000 for year 2). The expenses were assumed to be evenly divided between all twelve months in each of the two years (i.e., \$2,175,000 ÷ 12 or 181,000 for year 1; 2,000,000 ÷ 12 or \$166,700 for year 2).

The results of the cash flow analysis in Tables 17 and 18 demonstrates the seasonality of WRA's operations. The new operators of WRA, under the "middle case," according to this analysis, will have to wait until July in year 2 before showing a net gain in cash and by December of year 2, a net outflow of cash will occur again.

Table 14

Revenues for Year 1

|           |                          |              |
|-----------|--------------------------|--------------|
| January   | Fuel & Airfield Revenues | 25,800       |
|           | Rental                   | 94,000       |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 120,800      |
| February  | Fuel & Airfield Revenues | 21,000       |
|           | Rental                   | 94,000       |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 116,200      |
| March     | Fuel & Airfield Revenues | 28,400       |
|           | Rental                   | 94,000       |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 123,400      |
| April     | Fuel & Airfield Revenues | 33,100       |
|           | Rental                   | 94,000       |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 128,100      |
| May       | Fuel & Airfield Revenues | 43,000       |
|           | Rental                   | 94,000       |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 138,000      |
| June      | Fuel & Airfield Revenues | 70,200       |
|           | Rental                   | 94,000       |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 165,200      |
| July      | Fuel & Airfield Revenues | 71,500       |
|           | Rental                   | 94,000       |
|           | Sales & Service          | <u>2,000</u> |
|           | Total                    | 167,500      |
| August    | Fuel & Airfield Revenues | 80,800       |
|           | Rental                   | 94,000       |
|           | Sales & Service          | <u>2,000</u> |
|           | Total                    | 176,800      |
| September | Fuel & Airfield Revenues | 77,500       |
|           | Rental                   | 94,000       |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 172,500      |
| October   | Fuel & Airfield Revenues | 74,100       |
|           | Rental                   | 94,000       |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 169,100      |

Table 14 (cont.)

|          |                          |              |
|----------|--------------------------|--------------|
| November | Fuel & Airfield Revenues | 80,800       |
|          | Rental                   | 94,000       |
|          | Sales & Service          | <u>2,000</u> |
|          | Total                    | 176,800      |
| December | Fuel & Airfield Revenues | 55,600       |
|          | Rental                   | 94,000       |
|          | Sales & Service          | <u>1,000</u> |
|          | Total                    | 150,600      |

Table 15

Revenues for Year 2

|           |                          |              |
|-----------|--------------------------|--------------|
| January   | Fuel & Airfield Revenues | 27,100       |
|           | Rental                   | 103,300      |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 131,400      |
| February  | Fuel & Airfield Revenues | 22,200       |
|           | Rental                   | 103,300      |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 126,500      |
| March     | Fuel & Airfield Revenues | 29,900       |
|           | Rental                   | 103,300      |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 134,200      |
| April     | Fuel & Airfield Revenues | 34,800       |
|           | Rental                   | 103,300      |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 139,100      |
| May       | Fuel & Airfield Revenues | 45,200       |
|           | Rental                   | 103,300      |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 149,500      |
| June      | Fuel & Airfield Revenues | 73,700       |
|           | Rental                   | 103,300      |
|           | Sales & Service          | <u>2,000</u> |
|           | Total                    | 179,000      |
| July      | Fuel & Airfield Revenues | 75,100       |
|           | Rental                   | 103,300      |
|           | Sales & Service          | <u>2,000</u> |
|           | Total                    | 180,400      |
| August    | Fuel & Airfield Revenues | 84,800       |
|           | Rental                   | 103,300      |
|           | Sales & Service          | <u>2,000</u> |
|           | Total                    | 190,100      |
| September | Fuel & Airfield Revenues | 81,300       |
|           | Rental                   | 103,300      |
|           | Sales & Service          | <u>1,000</u> |
|           | Total                    | 185,600      |

Table 15 (cont.)

|          |                          |              |
|----------|--------------------------|--------------|
| October  | Fuel & Airfield Revenues | 77,800       |
|          | Rental                   | 103,300      |
|          | Sales & Service          | <u>1,000</u> |
|          | Total                    | 182,100      |
| November | Fuel & Airfield Revenues | 84,800       |
|          | Rental                   | 103,300      |
|          | Sales & Service          | <u>2,000</u> |
|          | Total                    | 189,800      |
| December | Fuel & Airfield Revenues | 58,400       |
|          | Rental                   | 103,300      |
|          | Sales & Service          | <u>1,000</u> |
|          | Total                    | 162,700      |

Table 16

Detroit Willow Run Airport Cargo Moved in 1973

| <u>Month</u> | <u>Pounds</u> | <u>Percent</u> |
|--------------|---------------|----------------|
| January      | 9,064,256     | 3.9            |
| February     | 7,570,312     | 3.2            |
| March        | 10,050,315    | 4.3            |
| April        | 11,731,883    | 5.0            |
| May          | 15,338,603    | 6.5            |
| June         | 24,828,745    | 10.6           |
| July         | 25,546,348    | 10.8           |
| August       | 28,522,116    | 12.2           |
| September    | 27,274,388    | 11.7           |
| October      | 26,134,185    | 11.2           |
| November     | 28,756,898    | 12.2           |
| December     | 19,864,119    | 8.4            |
|              |               | <hr/> 100.0    |

Table 17

Cash Flow for Year 1

|           |          |                |          |          |                |
|-----------|----------|----------------|----------|----------|----------------|
| January   | Revenue  | 120,800        | November | Revenue  | 176,800        |
|           | Expenses | <u>181,000</u> |          | Expenses | <u>181,000</u> |
|           |          | (60,200)       |          |          | (4,200)        |
| February  | Revenue  | 116,200        | December | Revenue  | 150,600        |
|           | Expenses | <u>181,000</u> |          | Expenses | <u>181,000</u> |
|           |          | (64,800)       |          |          | (30,400)       |
| March     | Revenue  | 123,400        |          |          |                |
|           | Expenses | <u>181,000</u> |          |          |                |
|           |          | (57,600)       |          |          |                |
| April     | Revenue  | 128,100        |          |          |                |
|           | Expenses | <u>181,000</u> |          |          |                |
|           |          | (52,900)       |          |          |                |
| May       | Revenue  | 138,000        |          |          |                |
|           | Expenses | <u>181,000</u> |          |          |                |
|           |          | (43,000)       |          |          |                |
| June      | Revenue  | 165,200        |          |          |                |
|           | Expenses | <u>181,000</u> |          |          |                |
|           |          | (15,800)       |          |          |                |
| July      | Revenue  | 167,500        |          |          |                |
|           | Expenses | <u>181,000</u> |          |          |                |
|           |          | (13,500)       |          |          |                |
| August    | Revenue  | 176,800        |          |          |                |
|           | Expenses | <u>181,000</u> |          |          |                |
|           |          | (4,200)        |          |          |                |
| September | Revenue  | 172,500        |          |          |                |
|           | Expenses | <u>181,000</u> |          |          |                |
|           |          | (8,500)        |          |          |                |
| October   | Revenue  | 169,100        |          |          |                |
|           | Expenses | <u>181,000</u> |          |          |                |
|           |          | (11,900)       |          |          |                |

Table 18

Cash Flow for Year 2

|           |          |                |          |          |                |
|-----------|----------|----------------|----------|----------|----------------|
| January   | Revenue  | 131,400        | November | Revenue  | 189,800        |
|           | Expenses | <u>166,700</u> |          | Expenses | <u>166,700</u> |
|           |          | (35,300)       |          |          | 23,100         |
| February  | Revenue  | 126,500        | December | Revenue  | 162,700        |
|           | Expenses | <u>166,700</u> |          | Expenses | <u>166,700</u> |
|           |          | (40,200)       |          |          | (4,000)        |
| March     | Revenue  | 134,200        |          |          |                |
|           | Expenses | <u>166,700</u> |          |          |                |
|           |          | (32,500)       |          |          |                |
| April     | Revenue  | 139,100        |          |          |                |
|           | Expenses | <u>166,700</u> |          |          |                |
|           |          | (27,600)       |          |          |                |
| May       | Revenue  | 149,500        |          |          |                |
|           | Expenses | <u>166,700</u> |          |          |                |
|           |          | (17,200)       |          |          |                |
| June      | Revenue  | 179,000        |          |          |                |
|           | Expenses | <u>166,700</u> |          |          |                |
|           |          | 12,300         |          |          |                |
| July      | Revenue  | 180,400        |          |          |                |
|           | Expenses | <u>166,700</u> |          |          |                |
|           |          | 13,700         |          |          |                |
| August    | Revenue  | 190,100        |          |          |                |
|           | Expenses | <u>166,700</u> |          |          |                |
|           |          | 23,400         |          |          |                |
| September | Revenue  | 185,600        |          |          |                |
|           | Expenses | <u>166,700</u> |          |          |                |
|           |          | 18,900         |          |          |                |
| October   | Revenue  | 182,100        |          |          |                |
|           | Expenses | <u>166,700</u> |          |          |                |
|           |          | 15,400         |          |          |                |



COMPARISON OF WILLOW RUN AIRPORT AND DETROIT METROPOLITAN

WAYNE COUNTY AIRPORT OPERATIONS

The viability of WRA is to some degree related to the performance of Detroit Metro. Furthermore, a brief look at Detroit Metro's operations may tell us something about WRA's operations and potential for growth and increased revenues. Tables 19 and 20 give the T-hangar and tie-down rental rates and the landing and use fees for Detroit Metro. Table 21 presents a brief comparison of WRA and Detroit Metro. It appears to indicate that WRA may be able to charge a landing fee for private aircraft and might be able to charge somewhat more for commercial landing fees.

It also is interesting to note that WRA's present air cargo volume is about half that of Detroit Metro. Perhaps some of the air cargo traffic presently using Detroit Metro could be channeled to WRA.

Table 19

Schedule of Monthly T-Hangar and Tie-Down Rentals

Detroit Metropolitan Wayne County Airport

Effective June 1, 1971

| <u>T-Hangars</u>     | <u>Private<br/>Monthly Rental</u> | <u>Commercial<br/>Monthly Rental</u> |
|----------------------|-----------------------------------|--------------------------------------|
| Small (870 sq. ft.)  | \$70.00                           | \$56.00                              |
| Medium (960 sq. ft.) | 77.00                             | 62.00                                |
| Large (1500 sq. ft.) | 120.00                            | 96.00                                |

| <u>Tie-Downs</u><br>(weights in pounds) | <u>Monthly Rental</u> | <u>Monthly Rental</u> |
|---|-----------------------|-----------------------|
| 0 - 3,000 ( single engine)              | \$20.00               | \$19.00               |
| 3,001 - 7,500 (small twin<br>engine)    | 45.00                 | 36.00                 |
| 7,501 - 12,500 (large twin<br>engine)   | 75.00                 | 60.00                 |
| 75,001 - 100,000                        | 600.00                | 480.00                |

Source: Airport Announcements

Table 20

Schedule of Landing And Use Fees

Detroit Metropolitan Wayne County Airport

Effective June 1, 1975

| <u>Weight in Pounds</u> | <u>Itinerant<br/>Private Aircraft</u> | <u>Commercial<br/>Aircraft</u> |
|-------------------------|---------------------------------------|--------------------------------|
| A. 0 - 3,000            | \$1.50                                | \$3.00                         |
| B. 3,001 - 7,500        | 2.75                                  | 5.50                           |
| C. 7,501 - 12,500       | 4.50                                  | 9.00                           |
| D. 12,501 - 20,000      | 7.50                                  | 15.00                          |
| E. 20,001 - 40,000      | 11.25                                 | 22.50                          |
| F. 30,001 - 50,000      | 18.75                                 | 37.50                          |
| G. 50,001 - 75,000      | 28.00                                 | 56.00                          |
| H. 75,001 - 100,000     | 37.50                                 | 75.00                          |
| I. 100,001 - 125,000    | 46.75                                 | 93.50                          |
| J. 125,001 - 150,000    | 56.25                                 | 112.50                         |
| K. 150,001 - 175,000    | 65.50                                 | 131.00                         |
| L. 175,001 - 200,000    | 75.00                                 | 150.00                         |
| M. 200,001 and over     | .375/M lbs.                           | .75/M lbs.                     |

Source: Wayne County Road Commission Announcement

Table 21

Comparison: Willow Run Airport and  
Detroit Metropolitan Wayne County Airport

|                                   | <u>WRA</u>                        | <u>DMWLA</u>  |
|-----------------------------------|-----------------------------------|---|
| 1. Annual Parking Ticket Revenues | None                              | \$54,632.61<br>(approx.)  |
| 2. Landing Fee Charges:           |                                   |   |
| Private Aircraft                  | None                              | 1.50-75.00<br>(depending on<br>weight of plane)                 |
| Commercial Aircraft               | .30/M lbs.                        | 3.00-150.00<br>(over 200,000 lbs.<br>additional<br>.375/M lbs.) |
| 3. Tie Downs                      |                                   |   |
| Private Aircraft                  | N/A                               | \$20-600/Mo.<br>(depends on<br>sq. ft.)                         |
| Commercial Aircraft               |                                   | \$14-480/Mo.<br>(depends on<br>sq. ft.)                         |
| 4. Fuel Charges                   | 0.6¢/gal.<br>fuel furn<br>charges | 3¢/gal. for first<br>500 gal. & 5% of<br>gross thereafter       |
|                                   | 4¢/gal. flowage                   |   |
| 5. Total Aircraft Operations      |                                   |   |
| 1973                              | 197,600                           | 278,553   |
| 1974                              | 176,373                           | 246,286   |
| 6. Air Cargo (tons)               |                                   |   |
| 1973                              | 117,350                           | 248,529   |
| 1974                              | 107,000                           | 233,610   |

POTENTIAL FOR INCREASED RENTAL REVENUE AT

WILLOW RUN AIRPORT

While it has been noted that rental revenue at WRA has been relatively stable, a closer examination of the components which make up WRA rental revenues is necessary. Table 22 presents data collected from the lease summaries in the airport records. While there may be valid reasons, it is clear that the rental rates (in terms of rent per square foot) vary widely. Furthermore, in the course of our interviews, it was noted that two firms in similar businesses paid for the use of space using entirely different methods. Perhaps a consistent and higher rental rate for WRA would produce higher revenues than generated in the past.

Table 22

Rental Information for Willow Run Airport

| <u>Tenant</u>             | <u>Location of Building</u>  | <u>Total sq. ft.</u>            | <u>Lease Period</u> | <u>Annual Rent</u>                | <u>Rent/sq. ft.</u> | <u>Length of Notice</u> |
|---------------------------|------------------------------|---------------------------------|---------------------|-----------------------------------|---------------------|-------------------------|
| Ace Aircraft              | 2602                         | 2,600                           | 6/1/75-6/1/76       | 5,200.00                          | \$2.00              | 30 days                 |
| Aircraft Access           | 2602                         | 1,363                           | 4/1/75-4/1/76       | 2,726.00                          | \$2.00              | 30 days                 |
| Air Traffic Service Corp. | Hgr. 2<br>area               | 5,636                           | 8/1/75-8/1/76       | 12,231.00                         | \$2.17              | 30 days                 |
| Am. Truck Driving School  | 2602<br>3 acres<br>park. lot | 860                             | 5/1/75-5/1/76       | 8,237.20                          | NA                  | 30 days                 |
| B.S.D.U.S.                | 2601                         | 396                             | 1/1/75-12/31/76     | 1,188.00                          | \$3.00              | 30 days                 |
| Butler Aviation           | Hgr. 3                       | 36,296                          | --                  | 10,823.00                         | 0.30                | --                      |
| Butler Aviation           | Hgr. 1<br>Bldg. 2            | 25,508                          |                     | 51,653<br>+.006/gal.<br>+.02/gal. | .49+                |                         |
| Charter Air Service       | Hgr. 1                       | 580                             | 1/1/73-1/1/76       | 1,740                             | \$3.00              | 30 days                 |
| Central Transport         | Bldg.<br>2068                | 11,652                          | 11/1/74-11/1/75     | 17,478                            | \$1.50              | 30 days                 |
| Chrysler Corporation      | Hgr. 1                       | 24,700                          | 1/71-five years     | 39,954.60<br>+.006<br>+.02        | \$1.61              | 30 days                 |
| Complete Auto Transit     |                              | 3 acres<br>of privt.<br>parking | 6/1/75-6/1/78       | 5,227.70                          | NA                  | 30 days                 |

Table 22 (continued)

| <u>Tenant</u>                  | <u>Location of Building</u> | <u>Total sq. ft.</u> | <u>Lease Period</u> | <u>Annual Rent</u> | <u>Rent/ sq. ft.</u> | <u>Length of Notice</u> |
|--------------------------------|-----------------------------|----------------------|---------------------|--------------------|----------------------|-------------------------|
| ERIM                           |                             | 213,619              | 1/1/73-12/31/75     | 106,809            | .50                  | 30 days                 |
| FAA                            |                             | 2,405                |                     | 7,085.76           | \$2.94               | 30 days                 |
| FAA Logistics Branch           | Flight bldg.                | 4,700                | Auto renewal        | 23,780.04          | \$5.00               | 30 days                 |
| FAA                            | 5th Floor                   | 316                  | Auto renewal        | 942.72             | \$2.98               | 30 days                 |
| Galaxy Air Freight             | 2054                        | 11,652               | 11/1/74-11/1/75     | 17,478.00          | \$1.50               | 30 days                 |
| GM                             | Hgr. 1                      |                      | 9/1/72-8/31/75      | 198,542.52         |                      | 30 days                 |
| Great Lakes Instrument Service | 2601                        | 1,346                | 3/1/75-3/1/76       | 4,086.00           | \$3.03               | 30 days                 |
| Hoover Air Transport           | S.W.                        | 32,460               | 6/15/72-6/15/82     | 1,785.70           | \$4.46               |                         |
| International Airlines Academy | Hgr. 2                      | 10,460               | 7/1/75-7/1/76       | 26,150.00          | \$2.50               | 30 days                 |
| Jet Way                        | Hgr. 1                      | 775                  | 4/10/75-4/10/76     | 3,100              | \$4.00               | 30 days                 |
| Manion Air Charger             | 2070                        | 11,652               | 10/1/74-10/1/75     | 17,478.00          | \$1.50               | 30 days                 |
| Frank Osborn                   | Rm. 302 in 2061             |                      | 1/1/75-12/31/75     | 560.00             |                      | 30 days                 |
| Overseas National Airways      | 2062-254-255                | 13,652               | 8/1/75-8/1/76       | 28,669             | \$2.09               | 30 days                 |

Table 22 (continued)

| <u>Tenant</u>                    | <u>Location of Building</u> | <u>Total sq. ft.</u> | <u>Lease Period</u> | <u>Annual Rent</u>             | <u>Rent/ sq. ft.</u> | <u>Length of Notice</u> |
|----------------------------------|-----------------------------|----------------------|---------------------|--------------------------------|----------------------|-------------------------|
| Professional Pilot Services      | Hgr. 1                      | 142                  | 4/1/75-4/1/76       | 461.50                         | \$3.25               | 30 days                 |
| Quality Controlled Electronics   | Hgr. 2                      | 714                  | 7/1/75-7/1/75       | 1,602.00                       | \$2.24               |                         |
| Rockwell International           | Hgr. 1                      | 325                  | 10/1/75-10/1/75     | 1,137.50                       | \$3.50               | 30 days                 |
| Supplemental Air Carrier Service | 2601                        | 1,400                | 5/1/75-5/1/76       | 6,650.00                       | \$3.50               | 30 days                 |
| Tec Air                          | Hgr. 1                      | 360                  | 1/1/75-12/31/75     | 1,500                          | \$4.00               | 30 days                 |
| U.S. Trunk Col                   | Parking<br>2601-1000        |                      | Month-to-month      | 1,524.60                       |                      | 30 days                 |
| Willow Run Services              | ramp<br>150,4000            |                      | 12/1/73-11/30/76    | 92,996 +50%<br>of all proceeds |                      |                         |
| Wolverine Aviation               | Hgr. 1                      | 700                  | 2/1/75-2/1/76       | 3,734                          | \$5.33               | 30 days                 |
| Zantop                           |                             |                      | 11/1/72-11/31/75    | 207,900                        |                      | 30 days                 |



OTHER WAYS TO INCREASE REVENUES AT WILLOW RUN AIRPORT  
AND THE IMPORTANCE OF MANAGEMENT

Given the potential for risk at WRA, it is very important that the WRAC consider all possibilities to increase WRA's revenue or to offset WRA's cost. The most obvious means would be to investigate the possibilities of beginning an industrial park at WRA. WRA, with its ability to use both rail and truck freight and its proximity to Detroit and the automobile industry, should certainly be considered as an industrial park. It is suggested that a developer or a railroad be approached for assistance in examining the feasibility of an industrial park at WRA.

There are also other areas which should be explored and encouraged at WRA. These include studying the feasibility of a restaurant and perhaps a hotel at the airport. In addition, perhaps certain local government facilities, such as a fire station, could be located at WRA. Also, a concerted and systematic effort should be made to use all the facilities already at WRA. Finally, the creation of a center executive aircraft, pilots and passengers should be explored.

This section highlights the importance of having a vigorous and imaginative management team running WRA and of having an interested and action-oriented board supporting such a management group. One of the reasons why WRA has appeared so lethargic in recent years, in spite of capable management, was the relative disinterest exhibited by the University of Michigan. The WRAC must play an active role in its direction of WRA. Just as important, it must be systematic and thorough in its search for a management team of skill and imagination. This is critical since skilled management often counter-balances the effects of poor conditions and creates its own opportunities.

RECOMMENDATIONS AND STRATEGY

The decision which the WRAC must make is critical for the communities its represents. WRA is an enormous undertaking for these groups. In order to reach a decision, the WRAC must develop an overall strategy for action. It should be remembered that the decision is not just a financial one, it is a managerial one as well. Therefore a number of significant recommendations are set forth:

1. A concerted effort must be undertaken at once to ascertain the exact amount which is available in the WRA reserve fund for repairs and replacements. Further, the WRAC must make certain that the reserve fund will be transferred to the new owners of WRA.
2. A more detailed study of the potential capital expenditures (especially the fuel farm) must be undertaken.
3. An effort should be started to see if the seeming inconsistencies in the rental rates at WRA can be eliminated and if the rents can be increased.
4. An active program must be undertaken to attract new tenants to WRA.
5. The possibility of increasing the landing fees for commercial aircraft and for initiating landing fees for private aircraft should be examined.
6. A study on the feasibility of increasing the air cargo operations at WRA should be undertaken. This would include discussions with the major automobile companies and the air cargo operators at WRA. Also it would include an examination of the ways to improve the air cargo facilities at WRA.
7. The possibility of moving one of the local fire stations to WRA should be discussed. This would minimize fire protection costs as well as possible reduce capital expenditures.

8. In any event, the possibility of an industrial park at WRA should be explored with interested developers, including the railroad.
9. Other external ways to increase income should be explored such as a restaurant, hotel, an executive aircraft center or other commercial facilities.
10. An expert money manager should be found to manage WRA's reserve fund so as to realize the highest return-on-investment.
11. The effect House Bill No. 4968 dealing with airport authorities on WRA operations should be investigated.
12. A systematic and thorough effort must be undertaken to locate a vigorous and imaginative airport manager and staff.
13. The WRA management team must be backed up by an informed and active board (i.e., the WRAC).
14. This entire strategy and set of recommendations must be accomplished in a coordinated and timely fashion.

LIST OF PERSONS INTERVIEWED OR CONTACTED FOR REPORT

Robert E. Pangburn, WRA Airport Manager

Gerald King, Assistant Airport Manager

FAA Tower Chief at WRA

Individuals in Detroit Metropolitan County Business Offices\*

William Krum, Chief Accountant, University of Michigan\*

Edward A. Mellman, formerly with Michigan Aeronautics, now with DOT\*

Duane A. Zantop, President, Zantop International Airlines

Leonard A. Shipan, Treasurer, Zantop International Airlines

John Lynch, head of Public Relations, GM Hydromatic Division

Gene Zepp, Director of GM Air Transport

\* Contacted by telephone

LIST OF DOCUMENTS REVIEWED FOR REPORT

Michigan State Airport Plan, Department of Commerce, Michigan Aeronautics Commission, April, 1971.

Ann Arbor Airport Master Plan, Phase I, Executive Summary Report, June 1975.

Analysis of the Candidate Roles for the Willow Run Airport, Task IC, SRI, July 10, 1975 (Draft).

Phase I Master Plan Report, Airfield Development Program, Detroit Willow Run Airport, Lundrum & Brown, February 1970.

Willow Run/Detroit Metropolitan as Joint Aeronautical Facility, A Preliminary Report to the Wayne County Road Commission, January 15, 1971.

Automotive Cargo Investigation, CAB Hearings (Docket Nos. 24122, et al), August 1974.

Various WRA records.

Various Detroit Metro records.

# Electrical Contractors ●



## A. F. SMITH and SON, INC.

815 West Michigan Avenue

Phone 482-0977

*Ypsilanti, Michigan*



OCTOBER 9, 1975

FULTON EAGLIN  
33 S HURON  
YPSILANTI, MICHIGAN

DEAR SIR:

IN RESPONSE TO YOUR INQUIRY REGARDING THE PRESENT OVERALL CONDITIONS OF THE ELECTRICAL SYSTEMS AT THE WILLOW RUN AIRPORT FACILITIES, WE KINDLY SUBMIT FOR YOUR COMMENT OUR FINDINGS. HOWEVER, THESE ARE SUBJECT TO FUTURE CORRECTIONS OF CONDITIONS WHICH, AT THE PRESENT TIME, MAY BE SATISFACTORY IN MEETING LOCAL AND STATE ELECTRICAL CODE ENFORCEMENT LAWS. CONSIDERATIONS OF CHANGES IN THE REQUIREMENTS AND REGULATIONS OF THE FEDERAL AVIATION AGENCY WITH RESPECT TO EXPANSIONS SHOULD ALSO BE TAKEN INTO ACCOUNT.

OUR CONTACTS WITH THE HEAD OF THE DEPARTMENT IN CHARGE WITH PHYSICAL PROPERTIES AT THE UNIVERSITY OF MICHIGAN ON OCTOBER 2, AND WITH THE AIRPORT MANAGER ON OCTOBER 7, 1975, CONFIRMED OUR ASSUMPTION THAT, BASICALLY, THE ELECTRICAL SYSTEMS ARE IN WORKING ORDER AND DO MEET THE PRESENT OPERATIONAL REQUIREMENTS WITH REGARD OF AVAILABILITY OF ELECTRIC CURRENT FOR THEIR CONSUMPTIONS. IN OUR DISCUSSIONS WE GOT THE IMPRESSION THAT THE FIGURES YOU MENTIONED PREVIOUSLY WOULD HAVE TO BE CONSIDERED AS LONG RANGE CAPITAL LAYOUTS, ON A STEP BY STEP BASIS, IN ORDER TO BRING THE FACILITIES UP TO DATE AS THE PRESENT MANAGEMENT SEES IT.

OUR FOLLOWING APPROXIMATE DOLLAR FIGURES SHOULD BE SEEN FROM A POINT OF VIEW OF STRICT MAINTENANCE, GENERAL OVERHAUL, NECESSARY REPAIRS OF SYSTEMS, AND MODEST IMPROVEMENTS FOR ESTABLISHING AN ADEQUATE OPERATIONAL LEVEL AND NOT AS GENERAL MODERNIZATION, DESIRABLE AS THEY MAY BE.

### ITEM #1 RUNWAY LIGHTING:

INSTALLED IN THE YEARS 1958/59 IN DIRECT BURIAL CABLES. IN THE PAST, QUITE A FEW MAINTENANCE PROBLEMS. A THOROUGH CHECKOUT AND POSSIBLE REPLACEMENT OF SOME FIXTURES AND CABLES NECESSARY.....\$24,000.00

### ITEM #2 PRIMARY DISTRIBUTION SYSTEM

SUBSTATION, EMERGENCY GENERATORS, DC BATTERIES AND BALANCE OF HIGH-VOLTAGE EQUIPMENT, WELL MAINTAINED AND IN VERY GOOD CONDITION. WE DON'T EXPECT ANY PROBLEMS IN THE IMMEDIATE FUTURE. HOWEVER, A GENERAL ALLOCATION IS DESIRABLE.....\$ 3,000.00

ITEM #3 HANGER DOORS

CHECK OUT OF ALL CONTROL COMPONENTS AND CABLES AS WELL AS THEIR  
POSSIBLE REPLACEMENTS MUST BE RECOMMENDED.....\$31,000.00

ITEM #4 RENOVATION OF MECHANICAL SYSTEMS IN  
3 HANGER BUILDINGS

TESTING OF MECHANICAL SYSTEMS, REWIRING OF SOME OF THESE, REPLACEMENTS  
OR RECONDITIONING OF FLUORESCENT AND INCANDESCENT LIGHT FIXTURES AND GENERAL  
REPAIR OF ELECTRICAL WIRING. REPLACEMENT OF DEVICES .....\$70,000.00

ITEM #5 PARKING LOT LIGHTING

THE PRESENT ILLUMINATION LEVEL IS INADEQUATE. TO ESTABLISH A  
FUNCTIONAL AND, FROM A POINT OF GENERAL SECURITY RECOMMENDABLE LIGHTING  
SYSTEM, CAN BY NO MEANS CONSIDERED AS A LUXURY. RESTORING THE BLACK-TOP  
SURFACE AFTER TRENCHING IS NOT INCLUDED IN THE FOLLOWING ALLOCATION  
OF .....\$122,000.00

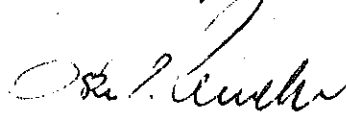
SUMMARY OF BUDGET ITEMS:

|          |                            |                     |
|----------|----------------------------|---------------------|
| ITEM #1: | RUNWAY LIGHTING:           | \$ 24,000.00        |
| ITEM #2: | PRIMARY DISTRIBUTION:      | \$ 3,000.00         |
| ITEM #3: | HANGER DOORS:              | \$ 31,000.00        |
| ITEM #4: | MECHANICAL SYSTEMS:        | \$ 70,000.00        |
| ITEM #5: | PARKING LOT LIGHTING:      | <u>\$122,000.00</u> |
|          | TOTAL CAPITAL REQUIREMENT: | <u>\$250,000.00</u> |

IN CONCLUSION, WE MIGHT ADD THAT THE ACTUAL INITIAL OUTLAYS MUST BE  
SUBJECT TO A MORE DETAILED EVALUATION AS OUTLINED IN THIS STUDY AND, A CERTAIN  
FACTOR OF FLEXIBILITY UNDOUBTLY MUST BE TAKEN INTO ACCOUNT.

RESPECTFULLY SUBMITTED,

A.F. SMITH AND SON, INC.



OSKAR MUELLER



# CITY OF YPSILANTI FIRE DEPARTMENT

110 WEST CROSS STREET  
YPSILANTI, MICHIGAN 48197

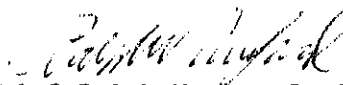
CHIEF OF FIRE  
RALPH W. CRAWFORD  
482-9778

ASST. CHIEF & FIRE MARSHAL  
HOWARD P. GNAGO  
482-9444

## REPORT ON WILLIOW RUN AIRPORT FIRE PROTECTION SYSTEM

The fire protection system at Willow Run Airport is operative at the present time and will probably last between one and five years. The key to the program is continued maintenance which apparently has been neglected for some time. In my opinion, a qualified Fire Protection Engineer should be consulted for recommendations for the entire system. The system was installed about 1943 or 1944. I have no idea what cost projection would be involved. The figure of \$300,000 that was suggested could be a ball park figure, but without proper evaluation may be inaccurate.

The age of the fire protection system is a primary concern of how long the existing system will last.

  
Chief Ralph W. Crawford





YPSILANTI COMMUNITY UTILITIES AUTHORITY

7200 SOUTH HURON RIVER DRIVE

YPSILANTI, MICHIGAN 48197

(313) 481-0400

October 10, 1975

Mr. Fulton England, Attorney  
Willow Run Airport Commission  
33 S. Huron Street  
Ypsilanti, MI 48197

Re: Adequacy of Water and Sewer System at Willow Run Airport

Dear Mr. England:

Review of the water and sewer facilities at the Willow Run Airport indicates that the water and sewer system is adequate for the existing uses.

We have conversed with Mr. Robert Pangborn, the Airport manager, regarding the current facilities and he feels that they are adequate except for 14,000 feet of sewer forcemain.

His concerns for the forcemain stem from an eight year old engineering report that calls for replacement of this forcemain. Unless the demand increases greatly, we feel that the life of this forcemain will exceed fifty years.

Yours truly,

*D. Bruce Jones*  
D. Bruce Jones  
Assistant Director

DBJ:bjk