A PUBLIC HELIPORT FOR DOWNTOWN CHICAGO?

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by

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and

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I. Introduction

The Chicago Association of Commerce and Industry Aviation Committee has for many years maintained a continuing interest in the development of helicopter air transportation within the Chicago metropolitan area. The basis of this interest is the fact that helicopters can provide fast movement of individuals in urban regions, thereby facilitating business activity within those areas. In the past, the CACI Aviation Committee has studied the decline of general aviation airports and consequently helicopter landing sites in the Chicago area. It has worked closely with city officials, members of the City Council, and representatives of the business community to effectuate the passage of a modern ordinance governing the construction of heliports in Chicago. Further, the Aviation Committee confers regularly with regional transport planning groups on the development of future aviation facilities in the Chicago area. In 1976, the committee conducted a survey to determine the potential use by Chicago-area businessmen of a public heliport in downtown Chicago. The survey also attempted to gain information on general interest of area businessmen in the use of helicopter air transportation. Along with presenting the results of this survey, this report will review national trends in the utilization of helicopters, present examples of how helicopters are currently being used by business, and analyze the current status of helicopter air transportation at the state and local levels.

II. National Trends in Helicopter Utilization

Helicopter utilization and emerging trends at the national level in this segment of aviation may be seen through the use of several different measures. These include: (1) the number of helicopters operated annually; (2) the number of heliports and helistops in use annually; and (3) the number and types of civil helicopter operators in existence at any given time. These data are shown in Tables I through III, below, for selected years during the period 1960 through 1977.

As may be seen from Table I, below, the total number of civil helicopters operated in the United States and Canada has risen sharply during 1960-1977.

Table I
Civil Helicopters Operated in the
United States and Canada
1960-1977
(selected years)

Year	Total Helicopters		Type of User: Commercial		Companies & Executives		Gov't Agency	
	No.	Factor	No.	Factor	No.	Factor	No.	Factor
1960	936	1.0	705	1.0	134	1.0	97	1.0
1965	2,053	2.2	1,537	2.2	401	3.0	115	1.2
1971	3,874	4.1	2,605	3.7	802	6.0	467	4.8
1975	5,222	5.6	3,342	4.7	1,056	7.9	824	8.5
1977	7,160	7.6	4,294	6.1	1,578	11.8	1,288	13.3

Source: Aerospace Industries Association of America, Inc., Aerospace Facts and Figures, 1978-1979, p. 89. Note: Data not published for 1970.

In 1960, there were 936 civil helicopters in operation. By 1977, the number had increased to 7,160, giving a growth factor of 7.6 times. In comparison, total active civil aircraft on record with the Federal Aviation Administration (F.A.A.) increased from 78,760 to 186,893 during the same period, for a growth factor of 2.4 times. (See Table IV, below.) Hence, the number of helicopters operated during 1960-1977 grew at 3.2 times the rate of growth in total active civil aircraft for that period.

Also, it should be noted in Table I that the greatest growth in number of helicopters operated occurred in governmental agencies and corporations. The number of governmental agency and corporate helicopters increased 75 and 55 percent faster, respectively, than the growth in total number of civil helicopters operated during 1960-1977.

With respect to heliports and helistops, the total number of landing sites increased from 357 to 3,433 during 1960-1977, as shown in Table II, below. This was 4.7 times the growth in number of airports in the U.S. during 1960-1977. (See Table V, below.) Further, the number of landing sites increased considerably faster than did the number of helicopters during this period.

It should also be noted in Table II that regionally the greatest number of heliports and helistops exist in the Pacific and Middle Atlantic areas. For 1977, some 821 heliports and helistops were located in the Pacific region, while 795 were located in the Middle Atlantic area.

Table II
Heliports and Helistops in the
United States, Canada, and Puerto Rico
1960-1977
(selected years)

Region	Year									
	1960		1965		1970		1975		1977	
	No.	Factor	No.	Factor	No.	Factor	No.	Factor	No.	Factor
Total	357	1.0	1,118	3.1	2,310	6.5	3,268	9.2	3,433	9.6
New England	17	1.0	88	5.2	93	5.5	143	8.4	164	9.6
Middle Atlantic	42	1.0	179	4.3	514	12.2	684	16.3	795	18.9
E. North Central	126	1.0	122	1.0	293	2.3	411	3.3	397	3.2
W. North Central	8	1.0	47	5.9	107	13.4	98	12.2	107	13.4
South Atlantic	21	1.0	97	4.6	192	9.1	352	16.8	306	14.6
E. South Central	8	1.0	25	3.1	47	5.9	107	13.4	144	18.0
W. South Central	36	1.0	116	3.2	205	5.7	338	9.4	339	9.4
Mountain	15	1.0	78	5.2	157	10.5	241	16.1	213	14.2
Pacific	73	1.0	320	4.4	593	8.1	789	10.8	821	11.2
Other	11	1.0	46	4.2	109	9.9	105	9.5	147	13.4

Source: Aerospace Industries Association of America, Inc., Aerospace Facts and Figures, 1967, p. 119; and 1978-1979 edition, p. 92.

Turning to Table III below, it may be observed that growth in the number of helicopter operators in the United States and Canada closely followed growth in the number of helicopters in use during 1960-1977. As of 1977, there were about 2,500 civil helicopter operators in the U.S. and Canada. Company and executive operators represented the largest group in 1977, with a total of over 1,200 operators. Moreover, 1975 was the first year in which company and executive operators exceeded commercial operators.[1] Since that time, this growth has continued. For 1975-1977, the number of company and executive operators increased 46 per cent. The number of helicopters operated by this group increased 49 per cent for the same period. This is the fastest growing segment among the classes of operators shown, both for 1975-1977 and 1960-1977, as measured by the number of operators.

Table III
Civil Helicopter Operators in the
United States and Canada
1960-1977
(selected years)

Year	Total Operators		Type of Operator					
			Commercial		Companies & Executives		Gov't Agency	
	No.	Factor	No.	Factor	No.	Factor	No.	Factor
1960	318	1.0	193	1.0	94	1.0	31	1.0
1965	860	2.7	508	2.6	299	3.2	53	1.7
1971	1,424	4.5	672	3.5	590	6.3	162	5.2
1975	1,891	5.9	779	4.0	833	8.9	279	9.0
1977	2,547	8.0	959	5.0	1,219	13.0	369	11.9

Source: Aerospace Industries Association of America, Inc., Aerospace Facts and Figures, 1978-1979, p. 89. Note: Data not published for 1970.

Table IV
Active Civil Aircraft on Record
With Federal Aviation Administration
1960-1977
(selected years)

Year	Number of Aircraft	Factor
1960	78,760	1.0
1965	97,741	1.2
1970	134,539	1.7
1975	171,156	2.2
1977	186,893	2.4

Source: Aerospace Industries Association of America, Inc., Aerospace Facts and Figures, 1976-1977, p. 82; 1975 data from 1975 edition, p. 104; 1977 data obtained via phone from Information and Statistics Division, Federal Aviation Administration, August 3, 1979.

Table V
Airports on Record
With Federal Aviation Administration
1960-1977
(selected years)

Year	Number of Aircraft	Factor
1960	6,881	1.0
1965	9,566	1.4
1970	11,261	1.6
1975	13,251	1.9
1977	14,117	2.1

Source: Federal Aviation Administration, FAA Statistical Handbook of of Aviation, 1972 edition, p. 46; for 1975 and 1977 data; 1977 edition, p. 17.

To summarize this section, there has been very high growth in the number of helicopters, heliports and helistops, and helicopter operators in the United States and Canada during 1960-1977. On the average, growth in number of helicopters operated was 3.2 times the rate of growth in total active civil aircraft for that period. Growth in number of heliports and helistops was 4.6 times the growth rate in number of airports in the United States during 1960-1977. Finally, while commercial operators owned the greatest number of helicopters, the total number of company and executive operators of helicopters exceeded commercial operators for the first time in 1975. This group represents the largest number of operators today and during 1975-1977 experienced growth of 46 percent. During the same period, the number of helicopters operated by this group increased almost 50 percent. These data highlight the potential that exists for corporate and executive use of helicopters.

III. Corporate and Executive Use of Helicopters

The high growth in business use of helicopters discussed above stems from two sources: (1) greatly improved performance of helicopters and (2) increased awareness of helicopter capabilities. With respect to performance, commercial and corporate operators now have available helicopters that can carry four to fifteen passengers at speeds of 140 to 175 miles per hour for up to 400 miles. Moreover, both single and twin-engine helicopters with single-pilot instrument flight rule capability are now in operation. Much of this performance capability has been developed during the past decade.

Military operations during the Viet Nam war brought great attention to the helicopter and its capabilities. Governmental agency use in police patrol, air ambulance, and fire department work served to further expand knowledge about helicopters. Successful commercial applications in off-shore drilling support, logging, pipeline patrol, television reporting, and construction operations have provided still more examples of what these aircraft can do.

In this section, examples of helicopter use by corporations and executives will be presented. Three corporate applications are reviewed: Rockwell International, Timex Corporation, and Digital Equipment Corporation. An example of use by an independent businessman is also covered.

Rockwell International Corporation

Since 1958, Rockwell International's helicopters have carried more than 200,000 passengers over a three-county area in Southern California. Moreover, the firm has an accident-free log that exceeds 40,000 hours of helicopter flying time.[2] With Western regional headquarters in El Segundo, Rockwell

International has more than 40,000 employees at major facilities spread over a large region in Southern California. From its regional headquarters adjacent to Los Angeles International Airport, Rockwell's International Science Center lies 35 miles northwest in Ventura County. Some 32 miles east of its corporate regional offices are the company's Electronics Operations facilities. In between, in Los Angeles County, are Rockwell divisions involved in projects such as the space shuttle, nuclear reactors, and rocket engines.

Rockwell's need for transportation in this area is great. There is a constant flow of people between the regional corporate offices and divisions, as well as between the divisions themselves. There is also need to travel to other southern California firms with whom Rockwell does business. Further, Rockwell personnel from other parts of the country, customer representatives, and officials from other companies arriving in Los Angeles have need to travel to the various Rockwell facilities.

To help meet this need for transportation, Rockwell operates an efficiently organized helicopter transportation system that uses two Jet-Rangers. These aircraft operate from dawn to dusk, carrying executives, scientists, engineers, other key personnel, and important visitors. The firm estimates that travel time is reduced to less than one-third of that required for ground transportation.[3]

The company operates both an hourly scheduled service plus a demand service. The helicopters serve nine Rockwell helistops as well as provide transportation to airports and more than a dozen other helipads in the region. The relatively long distances between some Rockwell facilities coupled with the often-congested freeway system in the Los Angeles basin make the helicopter an important factor in personnel movement.

For example, the route from Rockwell's Electronics Operations in Anaheim to its Science Center in Thousand Oaks is 70 miles and follows some of the most congested freeways in the region. During off-peak hours, travel time by auto is well over 90 minutes. At best, this is three times longer than by helicopter.[4]

With respect to scheduled service, the helicopter travels a 70-mile circuit in approximately 40 minutes flying time.[5] Leaving Los Angeles International Airport, the circuit is begun by flying 16 miles to Downey, where the space shuttle activity is centered. Next, the helicopter moves another 16 miles to Anaheim, where as previously noted, electronics work is conducted. Turning west, another 16-mile leg is flown to Seal Beach, where Rockwell has another Space Division facility. Finally, there is a 23-mile run back to Los Angeles International Airport. While most operations are in the Los Angeles area, flights have been made to San Diego, Palmdale, and Santa Barbara.

In 1976, more than 1,000 passengers were being moved on a monthly average of 750 flights. These flights range from 5 to 35 minutes, with the typical run lasting about 10 minutes. At that time, the JetRangers were each accumulating about 100 hours per month in flying time.[6] By 1978, the company had accumulated more than 44,467 accident-free hours in the air with helicopters and had made 266,902 landings, with more than one-half of those on rooftops.[7]

Thus, it may be seen that Rockwell is a firm that relies heavily upon the use of helicopters in the movement of corporate personnel and representatives of companies with whom it does business. Moreover, the company has operated helicopters for more than 20 years. In 1978, Rockwell was honored by the

Helicopter Association of America for helping to create an acceptance of helicopters in the Los Angeles community and for providing an outstanding example of a safe, well-run operation.[8]

Timex Corporation

Timex Corporation is headquartered in Middlebury, Connecticut, 65 miles from the closest airline terminal. In April, 1968, Timex took delivery of a Bell JetRanger 206A, following a demonstration by Bell that showed how efficiently the helicopter could move both parts and people into and out of Middlebury.[9] Originally, the helicopter was used as a company aircraft for all departments. However, demands for use became so great that priorities had to be established. Now, the machine is used mainly to move critical parts and key management, in that order.

A typical parts mission may entail a two-hour flight from Middlebury to Carlisle, Pennsylvania to pick up a box of parts for watches. From Carlisle, these parts are ferried to Kennedy Airport in New York City in about 1.2 hours. There they are placed on an airplane and flown to an assembly plant where they arrive three hours later. Hence, a shipment that might have taken days under normal cargo handling arrives in a few hours, possibly making the difference between keeping a production line open or shutting it down for want of parts.

When parts are not being moved, management personnel are usually using the JetRanger to shuttle between New York City heliports, Boston, eastern Pennsylvania, and other points throughout the Northeast for conferences and corporate meetings. It is possible to fly to Providence on business, have lunch, and return to Middlebury by 2:00 p.m. Or, executives can fly as far as

Lancaster, Pennsylvania, put in a full day of business, and yet be back in Middlebury late in the afternoon.[10]

Timex considers the helicopter a great success in its organization. Increased utilization has led to the hiring of a second pilot. By 1975, the Timex JetRanger had carried more than 7,100 passengers in over 4,300 flight hours.[11] The company estimates that it has saved 17,200 hours in transportation time alone during the first seven years of helicopter operation.[12] This does not include hours and dollars that might have been lost in production slowdowns or work stoppages stemming from parts shortages.

Digital Equipment Corporation

Digital Equipment Corporation is a leading manufacturer of minicomputers. With headquarters in Maynard, Massachusetts, the firm has manufacturing facilities in six Massachusetts towns, plus plants in California, Puerto Rico, Canada, Ireland, Hong Kong, and Taiwan. For Digital Equipment, helicopters have become prime people movers among its Massachusetts facilities. The firm presently operates three Bell 206B JetRangers, having purchased its first JetRanger in August, 1972.[13]

The use of these machines provides a classic example of how helicopters can yield significant savings to corporate operators. In 1974, Digital Equipment Corporation saved 28,000 man-hours in travel time by using helicopters to move people between its Massachusetts plants. At a conservative $15 per hour for salaries and fringe benefits, the company estimates that it saved $420,000 in non-productive labor costs that year.[14] The basis for savings of this magnitude rests with the fact that there is a high degree of interaction between Digital's facilities . Moreover, the highway system it uses is over-

burdened. For example, a round-trip by automobile from Maynard to Westfield, Massachusetts, 70 miles away, routinely took four hours per day, with 20-to-30 people per day making this trip.[15] With the JetRanger, the roundtrip can be made in approximately one hour. Studies made by the company prior to the acquisition of helicopters indicated that as much as 80 percent of the man-hour loss associated with ground transportation could be eliminated with the use of turbine-powered helicopters. Savings generated would be more than enough to cover the helicopter's operating expenses. Thus, as noted previously, the firm acquired its first helicopter in August, 1972. A second JetRanger was acquired in Fall, 1973, and the third was purchased in Fall, 1974.

Maximum utilization of these aircraft is evidenced by 1974 data. That year, the three helicopters:

1. flew 5,100 hours, with each machine averaging 141 hours of flight time per month, more than 6.6 hours per day;
2. flew 670,000 aircraft miles, making 900 scheduled flights per month;
3. carried 18,000 passengers between the Massachusetts plant sites and Boston's Logan Airport (in comparison, the two twin-engine Aztecs owned by the company flew 3,000 passengers);
4. flew with an average load factor of 3.8 out of 4.0;
5. and, as previously noted, saved 28,000 man hours in travel time.[16]

Each plant has copies of flight schedules and almost anyone with need can use the aircraft. These include engineers, production specialists, plant managers, directors, administrators, salesmen, and computer technicians. Further, customers are frequent passengers. One can easily tour all of the firm's plants in Massachusetts by helicopter and be headed home by 4:00 p.m.

the same day. The helicopters are also used as couriers for correspondence, movement of critical parts, aerial surveys, and rooftop (sling) work. Clearly, the helicopter has become an integral element in the daily operations of Digital Equipment Corporation.

Warner W. Hodgdon

Warner W. Hodgdon is an independent California businessman and financial consultant with offices in San Bernadino, 60 miles east of Los Angeles. Hodgdon operates a conglomerate of businesses between the Pacific Ocean and the Colorado River on California's eastern boundary. His businesses include a construction company, vehicle dealerships, a farming operation, an oil distributing firm, a cemetary, an engineering company, a farm equipment concern, and an Indianapolis car-racing team.[17]

It is not uncommon for Hodgdon to be in two or three widely scattered locations in the same day. A typical day starting in San Bernadino may include a trip 150 miles east to Blythe, a return to the office at San Bernadino, and then a journey on to Los Angeles International Airport for a flight east. This entails spanning the width of California 1.5 times, a seven-to-eight hour driving time under ideal conditions. By helicopter, this represents about 2.5 hours flying time.

To attain this degree of mobility, Hodgdon attempted to use fixed-wing aircraft. For his purposes, this proved to be unsatisfactory:

> "We'd rent smaller fixed-wing aircraft, but to be quite frank, that became really inefficient because I found there are getting to be fewer airports rather than more airports. So there was a certain amount of constriction."

"Then added to that, you have to rent a car (at the airports) and you have to return the car. So I find that the helicopter works out much better."[18]

Consequently, Hodgdon purchased a French-built, SA-341 IFR helicopter, taking delivery in December, 1975. With the helicopter, he can fly direct to a number of heliports and helipads in the Los Angeles area, where he has arranged permission to land. Also, he lands directly at some of his own concerns.

In addition to meeting his own transportation needs, Hodgdon has found the helicopter to be very useful in helping clients and investors he is working with to see for themselves a project under consideration:

"And here's where it really pays off. We can pick them up at the airport and show them the project. Whether you're talking to a lender, investor, or client, in our purview it's like seeing a man's poker hand before you sit down to transact business."[19]

Hodgdon logged 465 hours in 1976, using his helicopter practically every day. He plans to make the helicopter even more convenient by installing a helipad atop a building he owns in the downtown San Bernadino area. In viewing his helicopter as a business tool, Hodgdon exclaims: "It's the best investment I've ever made."[20]

IV. State and Local Trends in Helicopter Utilization

Trends in helicopter utilization at the state and local levels are measured two ways in this report: (1) the number of helicopters operated in Illinois, the City of Chicago, and the Chicago Metropolitan Area,[21] for selected years during 1965-1977; and (2) the number of heliports in Illinois, the City of Chicago, and the Chicago Metropolitan Area for selected years during 1960-1978. Comparisons are made with trends in helicopter utilization at the national level.

The number of helicopters operated in Illinois, the City of Chicago, and the Chicago Metropolitan Area is shown in Table VI, below. For the period 1965-1977, the number of helicopters operated in Illinois grew faster than the national average, more than quadrupling. The state-wide growth factor for this period was 4.3 as compared with a growth factor of 3.5 at the national level.[22] In contrast, the total number of helicopters operated in the City of Chicago increased by a factor of 2.5 during 1965-1977, some 42 percent less than growth in the state-wide number of helicopters in operation and about 29 percent less than growth at the national level. However, the number of helicopters operated in the Chicago Metropolitan Area (excluding the City of Chicago), grew sharply during 1965-1977, with a growth factor of 5.6 times. This is faster than either the national or state, growth rates, and is more than double (2.2 times) the growth experienced within the City of Chicago. By 1977, the number of helicopters operated in the Chicago Metropolitan Area exceeded the number operated from within the City of Chicago.

Table VI
Number of Helicopters Operated in Illinois,
City of Chicago, and Chicago Metropolitan Area
1965-1977
(selected years)

	Helicopters Operated		
Year	Illinois	City of Chicago	Chicago Metropolitan Area*
1965	29	13	7
1970	64	24	21
1975	74	22	20
1977	125	32	39
Growth Factors:			
1965-1977	4.3	2.5	5.6

Source: Aerospace Industries Association of America, Directory of Helicopter Operators in the United States and Canada, and Puerto Rico, selected years.

*Note: The Chicago Metropolitan Area in this study is defined as that portion of Cook County outside the City of Chicago, plus the five counties adjoining Cook: DuPage, Kane, Lake, McHenry, and Will. The number of helicopters shown in the Chicago Metropolitan Area excludes those based within the City of Chicago.

One major reason for the slow growth of helicopter operations in the City of Chicago during this period is the fact that in 1962 the Chicago City Council passed a restrictive ordinance governing heliport construction and operation. This action virtually eliminated helicopter transporation in the City of Chicago.[23] There were at least 15 elevated heliports in Chicago that were closed because of this ordinance. These included facilities at the Merchandise Mart and International Amphitheater. In 1973, the ordinance was revised to reflect the performance capabilities of modern helicopters and to be in closer conformance with the Federal Aviation Administration heliport design guidelines. For the period 1970 through 1977, the number of helicopters operated in Chicago increased by a total of eight, as shown in Table VI. This increase occurred in both the commercial and corporate-executive categories of operations.[24] There was no net change in the number of helicopters operated by governmental agencies in Chicago during 1970-1977. Eight helicopters were operated in this category for both years.

With respect to heliports, growth in the total number of heliports in Illinois generally has not kept pace with the nation. For the period 1965-1977, the number of heliports in Illinois increased from 78 to 164, as shown in Table VII, below. This results in a growth factor of 2.1 times.[25] During this same period, the number of heliports in the United States, Canada, and Puerto Rico increased from 1,118 to 3,433, for a growth factor of 3.1 times.[26] Hence, the national growth rate for heliports exceeded that of the State of Illinois by almost 48 percent during this period.[27]

Table VII
Heliports in Illinois
1960-1978
(selected years)

Year	Number of Heliports
1960	64
1965	78
1969	72
1971	91
1975	145
1977	164
1978	196

Growth Factors	State	National
1960-1977:	2.6	9.6
1965-1977:	2.1	3.1

Source: Illinois Department of Transportation, Division of Aeronautics, Illinois Aviation at a Glance (Heliports), Springfield, Illinois, 1979, pp. 5,6.

At the local level, data on heliports in the six-county northeastern Illinois area for 1969-1978 are shown in Table VIII, below. For 1969-1978, the number of heliports in Cook County increased from 21 to 30, giving a growth factor of 1.4 times. For the five-county area surrounding Cook, the growth factor during this same period was 1.9 times. The national growth factor for heliports during 1970-1977 was 1.5 times.[28] Hence, Cook County as a whole kept pace with the nation in development of heliports during this period, while the five-county area surrounding Cook exceeded both the national and Cook County growth rates by approximately 27 percent.

Table VIII
Heliports in Six-County Area
Northeastern Illinois
1969-1978

	County						Totals	
Year	Cook	DuPage	Kane	Lake	McHenry	Will	5-County Total (excluding Cook Cy.)	6-County Total
1969	21	4	1	3	2	5	15	36
1970	23	5	1	3	2	5	16	39
1971	22	5	2	3	2	4	16	38
1972	21	6	2	1	2	5	16	37
1973	24	6	2	3	2	5	18	42
1974	27	7	3	3	3	5	21	48
1975	26	10	4	3	3	5	25	51
1976	27	10	4	3	4	5	26	53
1977	30	11	4	5	4	5	29	59
1978	30	11	4	5	4	5	29	59
Growth Factors:								
1969-1978:	1.4	2.3	4.0	1.7	2.0	1.0	1.9	1.6

Source: Illinois Department of Transportation, Division of Aeronautics, Illinois Aviation at a Glance (Heliports), Springfield, Illinois, 1979, pp. 2,4, and 6.

For the City of Chicago, a different picture is presented in Table IX, below. In 1960, there were 35 heliports within the city limits. In 1965, four years after the passage of the previously noted restrictive heliport ordinance, the number of heliports in the City of Chicago dropped to 5. Since that time, there has been some increase in the number of heliports within the city. A peak of 13 was reached in 1975-1976 and 10 were in operation in 1977-1978. Consequently, for the period 1960-1977, the number of heliports in the City of Chicago decreased 71 percent. This compares with an 860 percent increase at the national level and a 69 percent increase at the state level for this period.[29]

Table IX
Number of Heliports in City of Chicago
1960-1978
(selected years)

Year	Number of Heliports
1960	35
1965	5
1970	8
1972	8
1973	7
1974	9
1975-1976	13
1977-1978	10

Source: Aerospace Industries Association of America, Heliports in the United States, Canada, and Puerto Rico, selected years. Note: combined directories for 1975-1976 and 1977-1978.

It is interesting to note that while Chicago had 10 heliports within the city limits in 1978, New York City had 12, and Los Angeles had 98. The number of heliports for each city is shown by type of facility in Table X, below. Heliports per million population for each city are shown in Table XI, below.

Table X
Number of Heliports in Chicago,
Los Angeles and New York City
By Type of Facility
1977-1978

	Type of Facility				
City	Gov't Agency	Hospital	Corp.-Private	Public	Total
Chicago	2	5	3	--	10
Los Angeles	36	8	49	5	98
New York City	3	--	4	5	12

Source: Aerospace Industries Association, Heliports in the United States, Canada, and Puerto Rico, 1977-1978. Heliports shown are within the city limits. The totals do not include metropolitan area heliports.

Table XI
Number of Heliports in Chicago,
Los Angeles and New York City
Per Million Population
1977-1978

City	No. Heliports	Est. Population (000's)	Heliports per Million Pop.
Chicago	10	3,074	3.3
Los Angeles	98	2,744	35.7
New York City	12	7,423	1.6

Source: Table X and U.S. Department of Commerce, Statistical Abstract of the United States, 1978, pp. 24-25. Population data shown are 1976 estimates for each city, excluding its metropolitan area.

When adjusted for population, Chicago exceeds New York City in the number of heliports per million population by a ratio of two-to-one. Chicago has done well in the development of heliports at hospitals. Notably lacking in Chicago is a public heliport. New York and Los Angeles have five each, while Chicago has none. In terms of total heliports per million population, Los Angeles outstrips both Chicago and New York by over 10- and 20-to-1, respectively. Corporate use of helicopter transportation in Los Angeles is especially noteworthy.

To summarize state and local developments, the number of helicopters in Illinos grew faster than the national average during 1965-1977, with a growth factor of 4.3 vs. 3.5 at the national level. For the City of Chicago however, the number of helicopters in operation during this period grew at a rate that was 42 percent less than the state-wide growth rate and 29 percent less than the national rate. Helicopter operations in the Chicago Metropolitan Area as defined grew at a rate more than double the rate for the City itself during this same period.

Heliport development in Illinois has not kept pace with the nation. During 1965-1977, growth in number of heliports at the national level exceeded state-wide growth by almost 48 percent. However, during 1969-1978, Cook County did keep pace with the national average, and the five-county area surrounding Cook grew 27 percent faster.

For the City of Chicago, there was a 71 percent decrease in the number of heliports during the period 1960-1977, moving from 35 in 1960 to 10 in 1977. For the period 1965-1977, the number doubled from five to ten. This overall decline was due to the passage of a restrictive heliport ordinance in 1962 and limited recovery following passage of a revised ordinance in 1973.

Also, in 1977-1978 when the City of Chicago had 10 heliports as noted, Los Angeles had 98 and New York City had 12. Adjusted for population, Chicago compares favorably with New York City. Both cities are outstripped by Los Angeles, on a scale of over 10- and 20-to 1, respectively. Further, Chicago has no public heliport, while both New York City and Los Angeles have five each. Lastly, the number of corporate-private heliports in Los Angeles is particularly notable: 49 of the 98 heliports within the city limits are in this category.

V. Chicago Downtown Public Heliport Survey

As previously noted, in February, 1976, the Chicago Area Airport and Heliport Planning Subcommittee of the Chicago Association of Commerce and Industry (CACI) surveyed the demand for helicopter transportation services between downtown and selected locations in the Chicago Metropolitan Area. A questionnaire was sent to 11,507 CACI members. Of these, 122 completely usuable returns were received. An additional five questionnaries were partially usuable and were included in the tabulations where applicable. The total responses received amounted to approximately 1.1 percent of the sample.

While a ten percent return generally is considered to be adequate, the typical response to a CACI mail survey ranges from 3 to 25 percent, depending upon the subject. Clearly, the one percent response rate experienced in this study does not allow one to make statistically valid generalizations about the population from which this sample was drawn.

Survey Questions and Tabulations

The survey questionnaire was directed to chief executive officers. A sample copy is shown in Appendix "A", below. Responses to each of the six questions are summarized below.

Question No. 1: Have executives in your organization used helicopter air transportation within the past year?

	NO.	%
Yes	42	33.9
No	82	66.1
N =	124	

If "Yes", how many times did these individuals use helicopter air transportation?

300 times per year total

or

7.1 times per year average per respondent (300 ÷ 42)

N = 34

Note: While 42 respondents indicated they had used helicopter air transportation within the past year, only 34 of these provided information on the number of times per year each used helicopter air transportation. Seven respondents did not indicate a specific number of times per year and one respondent whose firm owns its own helicopter indicated 300 hours per year of operation.

Question No. 2: If scheduled helicopter service were provided on a regular basis and at a reasonable fare between O'Hare Airport and a downtown heliport, would your company personnel use it?

	NO.	%
Yes	44	35.5
No	40	32.2
Maybe	40	32.2

N = 124

If "Yes," approximately how many trips per week?

107 times per week total

or

3.1 times per week average per respondent

N = 35

Note: While 44 respondents indicated they would use scheduled helicopter air service between O'Hare Airport and a downtown heliport, only 35 respondents provided specific estimates of the number of trips per week they would use such service.

Question No. 3: Would company personnel use a scheduled helicopter service at a reasonable fare between downtown Chicago and:

Airport	No. Responses	Yes		No		Maybe	
		No.	%	No.	%	No.	%
Aurora	84	4	4.8	76	90.5	4	4.8
Elgin	86	3	3.5	75	87.2	8	9.3
Joliet	83	2	2.4	75	90.4	6	7.2
Kankakee	82	2	2.4	76	92.7	4	4.9
Midway	92	12	13.0	62	67.4	18	19.6
Palwaukee	91	10	11.0	74	81.3	7	7.7
Waukegan	82	2	2.4	77	93.9	3	3.7

Estimated trips per week between downtown Chicago and:

Airport	Estimated Total Trips per Week	Average Trips per Week Per Respondent	Estimated No. of Respondents Likely to Make Trip Each Week	Percent of Total Respondents
Aurora	6.0	1.0	6	7.1
Elgin	7.5	1.1	7	8.1
Joliet	3.7	0.7	5	6.0
Kankakee	3.1	0.8	4	4.8
Midway	23.5	1.3	18	19.6
Palwaukee	16.5	1.2	13.5	14.8
Waukegan	4.5	1.3	3.5	4.3

Note: The estimated total trips per week between downtown Chicago and the airports indicated was derived in the following manner. First, under "Yes," responses, many replies did not indicate a specific estimated number of trips per week. Each such "Yes" reply was assumed to be equal to one trip per week. These replies were added to the estimated trips per week given with each "Yes" response for a given airport. Next, the "Maybe" responses were tabulated in the same manner. The total trips per week

estimated under "Maybe" responses was then divided by two, on the assumption that approximately 50 percent of the "Maybe" estimated trips would actually be completed. Then, these "Maybe" estimated trips per week were added to the "Yes" estimated trips per week to derive total estimated trips per week. Finally, the estimated number of respondents likely to make a given trip each week was derived by adding the number of "Yes" respondents to 50 percent of the number of respondents indicating "Maybe." (Average trips per week per respondent equals estimated total trips per week ÷ estimated number of respondents likely to make trip each week.)

Also, additional destinations listed under "Other" are shown in Appendix "B", below.

Question No. 4: Would your company use a commercial helicopter service between downtown Chicago and another suburban location for transporting cargo and/or employees?

	No.	%
Yes	16	15.0
No	75	70.1
Maybe	16	15.0
N =	107	

If so, to which city or town?

Destination	No. Replies
Chicago (North)	2
" (South)	1
Elmhurst/Addison	1
Geneva	1
Lansing	1
Milwaukee	1
Niles Industrial Park	1
Northbrook	1
Oak Park	1
O'Hare	1
Palos Heights	1
Rolling Meadows	1
Rosemont	1
Schaumburg	2
Wheaton	1
Wheeling	1
Winnetka	1
Other:	
Winnetka to Northfield	1
O'Hare to Rockford	1

Question No. 5: If a downtown heliport were constructed, would your company purchase or lease a helicopter for use in company operations?

	No.	%
Yes	3	2.5
No	110	92.4
Maybe	6	5.0
N =	119	

Question No. 6: Would your firm support development of a public heliport in the Chicago downtown area?

	No.	%
Yes	37	31.1
No	45	37.8
Maybe	37	31.1
N =	119	

For responses to "additional comments," please refer to Appendix "C", below.

Survey Findings

The major findings of this Chicago downtown heliport survey are presented in this section. The main areas of inquiry were (1) the degree to which Chicago-area business persons had used helicopter transportation anytime during the past year and how frequently; (2) whether Chicago-area business persons would use a scheduled helicopter service between downtown Chicago and O'Hare Airport, and if so how frequently; (3) whether scheduled helicopter service between downtown Chicago and major Chicago-area airports would be used: (4) whether commercial helicopter service for transporting either company personnel or cargo between downtown Chicago and other suburban locations was desired; (5) whether the construction of a downtown heliport

would induce purchase or lease of a helicopter by a company; and (6) whether a firm would support the development of a public heliport in downtown Chicago.

First, with respect to general use of helicopter air transportation, 34 percent of the respondents used helicopter transportation during the past year in which the survey was taken, for an average of 7.1 trips per year. It is not known whether this travel took place in the Chicago area or elsewhere. In light of the limited growth of helicopter operations in the Chicago region, it is quite possible that some of this travel occurred in other areas. Also, it should be noted that 66 percent of the respondents did not use helicopter air transportation during the past year.

Second, there appears to be considerable interest in scheduled helicopter service between downtown Chicago and O'Hare Airport. Almost 68 percent of the respondents gave evidence of this interest: 35.5 percent indicated they would use such a service approximately three times per week, while 32.2 percent indicated they might use such service. Further evidence of interest between downtown Chicago and O'Hare Airport was found in the remarks made on the questionnaires. As shown in Appendix "C", below, 8 of the 22 remarks mentioned actual or potential demand for helicopter service between downtown and O'Hare Airport. One of the more ebullient remarks follows:

> "The helicopter service between Meigs and O'Hare was only a bit more than cab fares including tip. It took only eight minutes and was justified as time saved for office use. It was great!"

Third, there is also evidence of demand for commercial helicopter service between downtown Chicago and two other airports: Midway and Palwaukee. Other than O'Hare, these are two of the three busiest airports in the Chicago Metropolitan Area, with most of the activity centering upon general aviation.[30]

For Midway Airport, almost 33 percent of the respondents to this question indicated actual or potential interest in scheduled helicopter service: 13.0 percent indicated they would use such a service and 19.6 percent indicated they might. The estimated average number of trips per week was 1.3 per respondent. For Palwaukee, almost 19 percent evidenced interest: 11.0 percent said they would use such a service and 7.7 percent indicated they might. The estimated number of trips per week was 1.2 per respondent. It should also be noted that some interest in service between downtown Chicago and Elgin Airport was evidenced: 12.8 percent indicated actual or potential interest, with 3.5 percent saying they would use such a service and 9.3 percent indicating they might. The estimated average number of trips per week was 1.1 per respondent. Less interest was evidenced for service to the remaining airports surveyed: Aurora, Joliet, Kankakee, and Waukegan. For these airports, actual and potential interest ranged from 6.1 percent to 9.6 percent of those responding. The average number of trips per week per respondent ranged from 0.7 to 1.3.

Fourth, with reference to using a commercial helicopter service for passengers or cargo between downtown Chicago and other suburban locations, 30 percent of the respondents indicated possible interest in such service: 15 percent indicated they would use it and 15 percent said they might. No single suburban location stood out as a preferred destination. (For the suburban locations indicated, please refer to the tabulation for Question No. 4, above).

Fifth, it would appear that the construction of a downtown heliport would not induce most companies to purchase or lease a helicopter for business use. About 92.4 percent of the respondents indicated they would not purchase or lease a helicopter if a downtown heliport were built. Only 2.5 percent

indicated they would, while 5 percent said they might lease or purchase.

Sixth, over 31 percent of the respondents indicated they would support in principle the development of a downtown heliport. Another 31 percent said they might support such a development.

Finally a review of the additional comments returned on the questionnaires can be summarized as follows:

1. As previously noted, there appears to be considerable interest in helicopter air transportation between downtown Chicago and O'Hare, Midway, and Palwaukee airports. In the additional remarks section of the survey questionnaire, 8 out of 22 responses indicated specific interest in service to O'Hare.
2. Several respondents indicated concern over the cost of such service. One respondent stated the cost would have to be less than $12.00 (1976 $) for a one-way trip between downtown Chicago and O'Hare.
3. One respondent felt priority should be given to establishing rail transit service between downtown Chicago and O'Hare.
4. Another questioned why such a facility should be public, indicating belief that the users should pay for it or Meigs should be used.
5. Still another respondent indicated belief that many companies in and around Chicago would be interested in flying their own helicopter if more heliports were available. Sample comments of respondents are shown in Appendix "C".

VI. Summary and Conclusions

This report surveys the development of helicopter transportation at the national, state, and local levels in the United States, State of Illinois, Chicago Metropolitan Area, and City of Chicago for the period 1960-1977. Three indicators are used to measure growth in helicopter transportation: (1) the number of helicopters in operation annually; (2) the number of heliports in existence each year; and (3) the number and types of civil helicopter operators in existence at any given time. Specific examples of how helicopters are presently being used by business are given. Also presented are the results of a survey on the demand for a downtown-Chicago heliport. The major findings of this study are summarized below.

1. There has been a very high rate of growth in the number of helicopters in operation in the United States during 1960-1977. In 1960, there were 936 civil helicopters in use. By 1977, the number had increased to 7,160. This growth was 3.2 times the rate of growth in total active civil aircraft for that period.
2. The total number of heliports and helistops in the United States increased from 357 in 1960 to 3,433 in 1977. This was 4.7 times the growth in number of airports during the same period.
3. The fastest growing segment among the several categories of operators has been the company and executive group. In 1977, there were about 2500 helicopter operators in the U.S. and Canada, over 1200 of which were company and executive operators. Since 1975, this has been the largest group of operators. For the period 1975-1977, the number of operators in this category increased 46 percent, and the number of helicopters operated by this group increased 49 percent.

4. This high growth in business use of helicopters is due to (1) greatly improved performance characteristics of modern helicopters and (2) increased awareness of helicopter capabilites by the business community.

5. For the State of Illinois, the number of helicopters operated more than quadrupled during 1965-1977, with a growth factor of 4.3 as compared with 3.5 at the national level. In contrast, the number of helicopters operated in the City of Chicago increased at a rate that was 42 percent less than state-wide and 29 percent less than nationally for 1965-1977. The Chicago Metropolitan Area (excluding the City of Chicago) experienced a growth factor of 5.6 times during this period.

6. Heliport development in the State of Illinois generally has not kept pace with the nation during 1965-1977. During this period, the number of heliports in Illinois grew by a factor of 2.1, while the national growth factor was 3.1. However, during 1969-1978, heliport growth in Cook County did keep pace with the national average and the five-county area surrounding Cook grew 27 percent faster.

7. In sharp contrast, the number of heliports in the City of Chicago decreased 71 percent during 1960-1977. In 1960, there were 35 heliports within the City. In 1965, this had dropped to five. In 1977-1978, a total of ten heliports were in operation within the City of Chicago. This decline for the City of Chicago compares with an 862 percent increase at the national level and a 69 percent increase at the state level in heliports operated during this period.

8. The basic reason for limited growth in helicopter operations and overall decline in heliports in the City of Chicago during 1960-1977 was the passage of a restrictive heliport ordinance in 1962. That ordinance practically curtailed helicopter operations within the City. In 1971, a modernized ordinance was passed and there has been a limited increase in helicopter operations and heliports in Chicago since that time.

9. In 1977-1978, when Chicago had 10 heliports as previously noted, New York City had 12 and the City of Los Angeles had 98. Adjusted for population, Chicago compares favorably with New York City, while Los Angeles outstrips both by 10- and 20-to-1, respectively. Also, Chicago has no public heliport, while New York and Los Angeles have five each. The number of corporate-private heliports in Los Angeles is especially notable.

10. With reference to the survey of Chicago-area business people, 34 percent of the respondents indicated they had used helicopter transportation during the preceding year. The average number of trips per respondent was 7.1.

    Almost 36 percent of the respondents indicated they would use scheduled helicopter service between downtown Chicago and O'Hare Airport, if provided on a regular basis at a reasonable fare. The estimated frequency of use was three times per week. Another 32 percent indicated they might use such a service. Therefore, 68 percent of the respondents could be considered actual or potential users of a scheduled helicopter service between downtown Chicago and O'Hare Airport.

11. With respect to the use of scheduled helicopter service between downtown Chicago and airports other than O'Hare, possible interest in service to Midway and Palwaukee airports emerged. For Midway, about 33 percent of the respondents indicated actual or potential interest in such service (13.0 percent "Yes" and 19.6 percent "Maybe"). For Palwaukee, about 19 percent indicated actual or potential interest (11.0 percent "Yes" and 7.7 percent "Maybe"). The estimated frequency of travel to either airport was low, with slightly more than one trip per week per respondent. Interest in service between downtown Chicago and other regional airports was limited.
12. The survey revealed only limited interest in service between downtown Chicago and other suburban locations. Only 15 percent of the respondents indicated any interest in such service, and there was no evidence of strong preference for any particular destination.
13. This survey indicated construction of a downtown heliport would not induce many companies to purchase or lease a helicopter. Less than three percent of the respondents replied positively to this question.
14. Support for the development of a downtown-Chicago heliport was indicated in this survey: 31 percent of the respondents indicated they would support this and another 31 percent indicated they might support such a development.

In conclusion, it is clear that development of helicopter transportation in the City of Chicago has not kept pace with either the surrounding metropolitan area, the State of Illinois, or the nation as a whole. Furthermore, there is interest on the part of the Chicago business community in (1) helicopter transportation; (2) the establishment of a scheduled helicopter service

between downtown Chicago and O'Hare Airport; and (3) the development of a downtown Chicago, public heliport.

Several unresolved questions emerge from this study: (1) Why has the development of helicopter transportation in the City of Chicago been slower than for the state and nation?; (2) Why is there no public heliport in the City of Chicago?; and (3) Why is corporate use of helicopters more limited in Chicago than either Los Angeles or New York City?

Clearly, additional research is needed to develop answers to these questions. It is the intent of the authors to pursue this research so that hopefully the City of Chicago with its large business community can more fully exploit the potential for mobility and efficiency that exists in the modern helicopter.

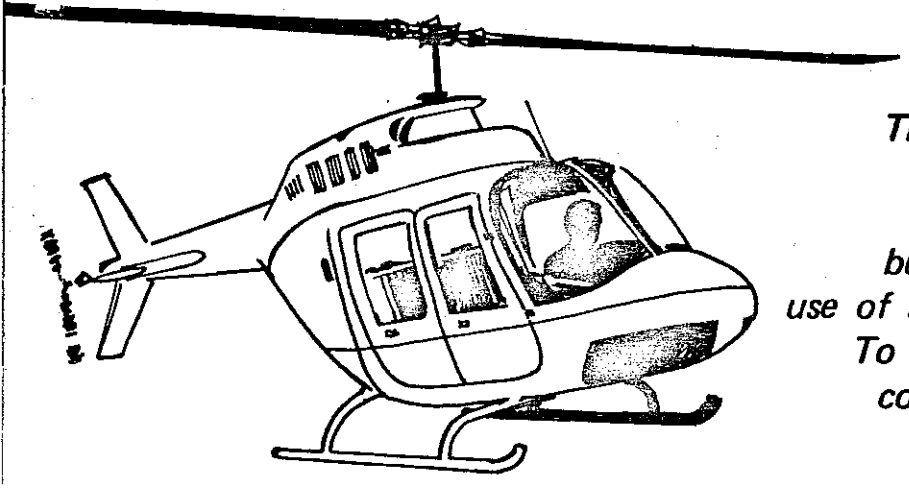
APPENDIX "A"

Chicago Downtown Public Heliport Survey

Questionnaire

To The Chief Executive Officer:

Do you need HELICOPTER SERVICE?



The Chicago Association of Commerce and Industry Aviation Committee is conducting a survey of Chicago area businesses to determine their potential use of a public Chicago downtown heliport. To help make this determination, please complete and return this questionnaire by March 1, 1976.

1. Have executives in your organization used helicopter air transportation within the past year? YES ☐ NO ☐

If "Yes," how many times did these individuals use helicopter air transportation?_____times per year.

2. If scheduled helicopter service were provided on a regular basis and at a reasonable fare between O'Hare Airport and a downtown heliport, would your company personnel use it? YES ☐ NO ☐ MAYBE ☐

If "Yes," approximately how many trips per week?_____

3. Would company personnel use a scheduled helicopter service at a reasonable fare between downtown Chicago and

	Estimated Trips Per Week			
a. Aurora Airport	_____	YES ☐	NO ☐	MAYBE ☐
b. Elgin Airport	_____	YES ☐	NO ☐	MAYBE ☐
c. Joliet Airport	_____	YES ☐	NO ☐	MAYBE ☐
d. Kankakee Airport	_____	YES ☐	NO ☐	MAYBE ☐
e. Midway Airport	_____	YES ☐	NO ☐	MAYBE ☐
f. Palwaukee Airport	_____	YES ☐	NO ☐	MAYBE ☐
g. Waukegan Airport	_____	YES ☐	NO ☐	MAYBE ☐
h. Other	_____	YES ☐	NO ☐	MAYBE ☐

4. Would your company use a commercial helicopter service between downtown Chicago and another suburban location for transporting cargo and/or employees? YES ☐ NO ☐ MAYBE ☐

If so, to which city or town?_____

5. If a downtown heliport were constructed, would your company purchase or lease a helicopter for use in company operations? YES ☐ NO ☐ MAYBE ☐

6. Would your firm support development of a public heliport in the Chicago Downtown area? YES ☐ NO ☐ MAYBE ☐

Please indicate any additional comments you wish to make.

_____

_____

_____

_____

CHICAGO ASSOCIATION OF COMMERCE AND INDUSTRY

CACIF

APPENDIX "B"

Chicago Downtown Public Heliport Survey

Other Destinations Indicated in Response to Question No. 3

3. Would company personnel use a scheduled helicopter service at a reasonable fare between downtown Chicago and:

Other Destination Indicated	No. Yes	No. Maybe	Estimated Total No. Trips per Week (When indicated)
Chicago (North)	1		
Crestwood-Howell	2		0.5
DuPage County Airport	3		4
Hammond	1		
Milwaukee	1		
O'Hare	1		2
Rockford		1	
Schaumburg	2		4 to 5
Wheaton	1		0.25
Winnetka	1		
No "Other" location specified	2	2	

APPENDIX "C"

Chicago Downtown Public Heliport Survey

Selected Additional Remarks by Respondents

Please indicate any additional comments you wish to make.

1. "We liked the Midway, Meigs, O'Hare Schedule."

    1. Used helicopter air transportation 10 times within past year.*

    2. Maybe.*

2. "What is the relationship of this study to the helicopter potential of Meigs Field? Furthermore, are there any legal problems (city/county ordinances) in establishing a downtown heliport? Would be interested in a report/or findings of the survey."

    1. Two times past year.

    2. Yes. Two-to-three trips per year.

3. "We are located in Oak Brook, Illinois."

    1. No.

    2. No.

4. "Ours is a district sales office, hence no need for such service. Thank you."

5. "We are not located in the Downtown Chicago area."

    1. No.

    2. No.

---

*Shown as inserts here are each respondent's replies to Question Nos. 1 and 2 relating (1) to use of helicopter air transportation during past year and frequency thereof; and, (2) use of a scheduled helicopter service between downtown Chicago and O'Hare Airport. See Appendix "A" for text of each question.

6. "Primary use would be to avoid rush hour traffic between Loop and O'Hare. Downtown heliport would have to be conveniently located to justify the service."

    1. No.

    2. Yes. Two per month.

7. "I think there are many other more fruitful ways to spend the tax payers' dollars - rail transit to and from O'Hare should be way ahead of this project."

    1. No.

    2. No.

8. "Answer to No. 6 means no financial support."

    1. No.

    2. No.

    (No. 6 was answered "No")

9. "The cost would be very important. As an example, the fare to Elgin would have to be in the $20.00 range."*

    1. No.

    2. Yes. One trip per week.

10. "Our firm is relatively small. From our location, by car, it takes about 1/2 hour during light traffic periods. We would use a commercial helicopter during heavy traffic periods for quick meetings, emergency document pick-ups."

    1. No.

    2. Maybe. (Unspecified number)

11. "Helicopter service from O'Hare to the loop would have to be less than $12.00 per one-way trip.* O'Hare to Midway would depend upon increased air traffic from Midway. Midway should be abandoned as an air facility and the land used for a sports complex or small manufacturing development."

    1. No.

    2. Maybe. (Unspecified number)

*Note: 1976 dollars.

12. "The helicopter service between Meigs and O'Hare was only a bit more than cab fares including tip. It took only 8 minutes and was justified as time saved for office use. It was great!"

    1. Yes. 15 to 20 times per year.

    2. Yes. Two-to-three trips per month.

13. "Service between O'Hare and key suburban points, such as the feeder airports listed above, should also be considered."

    1. Yes. Two-to-three per year

    2. No.

14. "We own and operate a.....* helicopter at the present, therefore we wouldn't use an outside service. But, we are in favor of a downtown heliport. If we did not have our helicopter, we would answer 'Yes' to all the above questions!....."

    1. Yes. 300 hours.

    2. Unspecified number

15. "Good to have O'Hare - Meigs (etc.) service."

    1. Yes. One trip per year.

    2. Maybe. Two trips per month.

16. "Company has heliport.....* in suburban location.....*"

    1. Yes. 25 times per year.

    2. Maybe.

17. "Why public! Let users pay for it! What's the matter with Meigs Field?"

    1. Yes. (unspecified number)

    2. Maybe. (" ")

*deleted by authors.

18. "We are considering buying our own helicopter to use between.....* O'Hare, and downtown Chicago."

    1. Yes. 20 times per year.

    2. Yes. 10 trips per week.

19. "I think many companies in and around Chicago would be interested in flying their own helicopter if only there were more heliports. I also do believe that a great number of people would be interested and not only members of CACI....."

    1. Yes. (Unspecified no.)

    2. We use our own (many times a week).

20. "Desirous of quick transportation to and from O'Hare during rush hours to avoid unpredictable time factor and attendant anxieties inflicted on our out-of-town and overseas guests."

    1. No.

    2. Not tabulated; unusable.

21. "Company very nearly.....* puchased a .....* several years ago. Decided not to procede when heliports were closed in Chicago (at the Merchandise Mart and Hilton Hotel)."

    1. Not answered.

    2. Not answered.

22. "Let's use heliports already available - Hilton, Merchandise Mart, or tops of other buildings like banks."

    1. None recently; we would like to.

    2. Yes. 1 or 2 trips per week.

---

*deleted by authors.

FOOTNOTES

[1]Aerospace Industries Association of America, Directory of Helicopter Operations in the United States, Canada, and Puerto Rico, 1978, p. ii. In 1978, the total number of corporate and executive operators was 1,515, giving an increase of 82 percent since 1975. See also, Aerospace Industries Association of America, Aerospace Facts and Figures, 1976-1977, p. 88.

[2]J.J. Barber, " 'Safety First and Last' - Rockwell's Words to Fly By," Rotor & Wing, September/October, 1976, p. 71.

[3]Ibid., p. 71.

[4]Ibid., p. 84.

[5]Ibid., p. 84.

[6]Ibid., pp. 71, 84.

[7]"Rockwell's Flight Operations Honored for Safety Record," Rotor & Wing, April, 1978, p. 66.

[8]Ibid., p. 66.

[9]"Moving Parts, People on Time(x)," Rotorways, Vol. 6, No. 4, October, 1975, p. 18.

[10]John P. Conway, "The Timex Timesaver," Rotorways, Vol. 2, No. 3, January, 1971, p. 10.

[11]"Moving Parts....," op. cit., p. 19.

[12]This estimate is calculated as follows: helicopter time-to-location subtracted from time-to-drive.

[13]"How Digital Equipment Saves 28,000 Man-Hours a Year," Rotor & Wing, November/December, 1975, p. 27.

[14]Ibid., p. 26.

[15]Ibid., p. 27.

[16]Ibid., p. 26.

[17]J.J. Barber, "Warner Hodgdon's Decision-Making Helicopter," Rotor & Wing, September, 1977, p. 62.

[18]Ibid., p. 62.

[19]Ibid., pp. 62, 63.

[20]Ibid., p. 63.

[21]For definition of Chicago Metropolitan Area, see Table VI.

[22]For national data, see Table I.

[23]Robert A. Richardson, "The Commercial Helicopter - Into the 1980's," paper presented to the Chicago Association of Commerce and Industry Aviation Committee, November 12, 1979, p. 3. Mr. Richardson is Executive Director, Helicopter Association of America.

[24]Aerospace Industries Association of America, Directory of Helicopter Operators in the United States, Canada, and Puerto Rico, 1970 and 1977.

[25]For 1965-1978, the State of Illinois growth factor was 2.5 times. 1978 data on heliports at the national level were not available at time of writing.

[26]For national data on heliports, see Table II.

[27]For the period 1960-1977, the growth factor for number of heliports in Illinois was 2.6 times; at the national level it was 9.6 times. (See Table II for national data).

[28]For national data on heliports, see Table II.

[29]Aerospace Industries Association of America, Heliports in the United States, Canada, and Puerto Rico, 1977-1978, p. 3, and Table II, above.

[30]U.S. Department of Transportation, Federal Aviation Administration, FAA Air Traffic Activity, FY1978, p. 27. Total operations for Chicago-area airports in FY1978 were as follows: O'Hare: 754,986; DuPage County: 281,901; Palwaukee: 275,281; Midway: 173,189; and Meigs: 79,910.

A SURVEY OF HELICOPTER TRAVEL BY CHICAGO-AREA CHIEF EXECUTIVE OFFICERS AND TOP MANAGERS

Presented to the

Aviation Committee

of the

Chicago Association of Commerce and Industry

by

Hale C. Bartlett

and

Paul A. Dillon

December 31, 1980

ACKNOWLEDGEMENT

The authors wish to express their appreciation to the chief executive officers and top managers who participated in this survey. The wide response to our questionnaire has been most helpful in attempting to discern the sentiments of the Chicago-area business community toward the use of helicopters for business travel. Any errors in the study are of course the responsibility of the authors.

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December 31, 1980

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SURVEY OF HELICOPTER TRAVEL BY CHICAGO-AREA CHIEF EXECUTIVE OFFICERS AND TOP MANAGERS

I. Introduction

In November, 1980, the Chicago Association of Commerce and Industry Aviation Committee conducted a survey of Chicago-area chief executive officers and top managers to determine their interests and attitudes toward the use of helicopters for business travel. A major purpose of this survey was to determine if there is interest on the part of the business community in the establishment of a public heliport in downtown Chicago.

At present, the City of Chicago has no public heliport. In contrast, Los Angeles and New York City each have five public heliports.[1] In New York City, the five heliports are located on Manhattan Island and in 1979 together generated one-fourth the number of aircraft operations of La Guardia Airport.[2] The existence of these heliports has apparently helped to reduce the exodus of business from the city. One expert indicates that 68 corporations remain in New York City by using the 60th Street Heliport.[3]

II. Methodology

The population for this survey consisted of all major Chicago-area business firms employing 1,000 or more persons. Manufacturing and non-manufacturing firms were included. Hospitals, universities, and public agencies were excluded. In Fall, 1980 there were 250 major business firms in the Chicago metropolitan area, as defined above.[4] Questionnaires were sent to each firm, directed to the chief executive officer if the firm was headquartered in this area. For companies operating facilities in the Chicago area but headquartered elsewhere, questionnaires were directed to the highest-ranking local manager. Of the 250 questionnaires mailed, 131 replies

were received, giving a response rate of 52 per cent. The questionnaire is shown in Appendix "A" below. The survey results are presented in the following section. All confidence intervals are calculated at the .95 level.[5]

III. Analysis

Information on the use of helicopters for business travel by Chicago-area executives is shown in Table I, below. In 1980, 10.7 per cent of the survey respondents traveled by helicopter for business purposes. For a majority of respondents, the frequency of travel was quite evenly distributed between one and four trips per year. About 36 per cent of the respondents used the helicopter in areas other than Chicago, mostly out-of-state. For the remainder, usage was rather evenly divided between local (within the Chicago metropolitan area) and regional travel (from Chicago to destinations approximately 100-150 miles from the Chicago metropolitan area.) Among those executives who did not use helicopters for business travel in 1980, almost 84 per cent indicated they had flown in a helicopter prior to that year.

The level of interest in commercial helicopter service at reasonable fares between a downtown-Chicago public heliport and either O'Hare or Midway airports is shown in Tables II and III, below. About 27 per cent of the respondents indicated a downtown-Chicago public heliport with commercial helicopter service to O'Hare Airport would be of use to members of their organization. About 18 per cent indicated the same would be true for commercial helicopter service to Midway Airport. If commercial airline service resumed at Midway with sufficient frequency, 34 per cent of the respondents would be interested in commercial helicopter service to Midway Airport.[6]

Table I

Use of Helicopter for Business Travel

Chicago-Area Executives

1980

Question	Response					
	Yes		No		Total	
	No.	(%)	No.	(%)	No.	(%)
1. Have you used a helicopter for business travel during the past year?	14	10.7	117	89.3	131	100.0
.95 confidence interval	Yes: 10.7% ± 3.6%		No: 89.3% ± 3.6%			
	Yes		No		Total	
	No.	(%)	No.	(%)	No.	(%)
2. If the answer to Question No. 1 was "No", have you ever flown in a helicopter?	98	83.8	19	16.2	117	100.0
.95 confidence interval	Yes: 83.8% ± 4.9%		No: 16.2% ± 4.9%			

Table II

Interest in Downtown-Chicago Public Heliport
With Commercial Helicopter Service to O'Hare Airport
November, 1980

Question

3. Would a downtown-Chicago public heliport be of use to you or other members of your organization in the conduct of your business if a commercial helicopter service between downtown and O'Hare Airport were available at a reasonable fare?

Response

Yes		No		Possibly		Total	
No.	(%)	No.	(%)	No.	(%)	No.	(%)
35	26.7	95	72.5	1	0.8	131	100.0

.95 confidence interval:*

Yes: 26.9% $\pm$ 5.3% No: 73.1% $\pm$ 5.3%

*Confidence interval calculated on basis of 130 responses.

Table III

Interest in Downtown-Chicago Public Heliport
With Commercial Helicopter Service to Midway Airport
November, 1980

Question

4. Would commercial helicopter service from downtown Chicago to Midway Airport be of use to you on other members of your organization in the conduct of your business?

Response

Yes		No		Total	
No.	(%)	No.	(%)	No.	(%)
23	17.6	108	82.4	131	100.0

.95 confidence interval:

Yes: 17.6% $\pm$ 4.5% No: 82.4% $\pm$ 4.5%

Question

4a. If "No", would such a service be useful if commercial airline service resumed at Midway with sufficient frequency?

Response

Yes		No		Total	
No.	(%)	No.	(%)	No.	(%)
22	20.4	86	79.6	108	100.0

.95 confidence interval:

Yes: 20.4% $\pm$ 5.7% No: 79.6% $\pm$ 5.7%

The degree of interest in commercial helicopter service from downtown Chicago to other destinations within the metropolitan area is shown in Table IV, below. Over 19 per cent of the respondents indicated interest in such a service. Many different destinations were indicated. Northern suburban locations were cited most frequently (eight times), with Palwaukee mentioned three out of these eight times. Western suburban locations were indicated seven times, with Oak Brook mentioned two out of these seven times. Northwest and south-suburban locations were each mentioned twice.

The level of interest in a downtown-Chicago public heliport without commercial helicopter service is shown in Table V below. Only 8.4 per cent of the respondents indicated such a facility would be of use to their firm.

The general attitude of respondents toward the existence of a downtown-Chicago public heliport stood in marked contrast to the 8.4 per cent who indicated such a facility without commercial helicopter service would be of value to their firm. Almost 56 per cent of the respondents indicated belief that Chicago should have a public heliport in the downtown area. As shown in in Table VI below, the sentiment in favor of a public downtown heliport ran 2.35 to 1.0, excluding the 21 per cent who were uncertain or did not reply.

The next area of questioning was concerned with reasons why the helicopter is not used for business travel. As shown in Table VIII below, the most frequent response was Item a, "Business needs not suited to use of helicopter." This response accounted for some 25 per cent of the total replies received for Question No. 8. The second most frequent response was Item c, "Too costly to own and operate helicopter," with 18.8 per cent of the total replies. The third most common response was Item f, "Business location not suited to the use of helicopter transportation," with 16 per cent of the total replies received for this question.

Table IV

Interest in Downtown-Chicago Public Heliport
With Commercial Helicopter Service to Other Chicago
Metropolitan Area Destinations
November, 1980

Question

5. Would commercial helicopter service from a downtown heliport to other destinations in the Chicago Metropolitan Area at reasonable fares be of use to you or other members of your organization?

Response

Yes		No		No Reply		Possibly		Total	
No.	(%)	No.	(%)	No.	%	No.	%	No.	(%)
25	19.1	102	77.9	3	2.3	1	0.8	131	100.0

.95 confidence interval:*

Yes: 19.8% ± 4.7% No: 80.2% ± 4.7%

*Confidence interval calculated on the assumption that the sum of the "No Reply" and "Possibly" responses would be distributed in the same proportion as the original "Yes" and "No" responses (25 ÷ 127 = 19.685% "Yes"). Thus, of the four "No Reply" or "Possibly" responses, 0.79 or 1.0 was allocated to the "Yes" responses and 3.21 or 3 were allocated to the "No" responses. The confidence level calculation is therefore based on 26 "Yes" responses and 105 "No" responses, for a total of 131 responses.

Table V

Interest in Downtown-Chicago Public Heliport
Without Commercial Helicopter Service
November, 1980

Question

6. Would a downtown-Chicago public heliport without commercial helicopter service be of value to you or your firm?

Response

Yes		No		Possibly		No Reply		Total	
No.	(%)	No.	(%)	No.	%	No.	%	No.	(%)
11	8.4	118	90.1	1	0.8	1	0.8	131	100.0

.95 confidence interval:*

Yes: 8.5% $\pm$ 3.3% No: 91.5% $\pm$ 3.3%

*Confidence interval calculated on basis of 129 responses.

Table VI

General Attitude Toward Existence
of a Downtown-Chicago Public Heliport
November, 1980

7. Do you believe Chicago should have a public heliport in the downtown area?

Response

Yes		No		Uncertain or No Reply		Total	
No.	%	No.	%	No.	%	No.	%
73	55.7	31	23.7	27	20.6	131	100.0

.95 confidence interval:*

Yes: 70.2% $\pm$ 5.4% No: 29.8% $\pm$ 5.4%

*Confidence interval calculated on the assumption that the "Uncertain" or "No Reply" responses would be distributed in the same proportion as the original "Yes" and "No" responses (73 ÷ 104 = 70.192% "Yes"). Thus, of the 27 "Uncertain" or "No Reply" responses, 18.95 on 19 were allocated to the "Yes" responses and 8.05 or 8 were allocated to the "No" responses. The confidence level calculation is therefore based on 92 "Yes" responses and 39 "No" responses, for a total of 131 responses.

Table VII

Reasons Why Helicopter Not Used
For Business Travel
November, 1980

Question

8. If you do not use helicopters for business travel, would you please indicate why:

Response

Item	No. Replies	%
a. Business needs not suited to use of helicopter	81	25.4
b. No commercial helicopter service available	35	11.0
c. Too costly to own and operate helicopter	60	18.8
d. Too costly to charter helicopter	41	12.8
e. General lack of availability of convenient heliports	25	7.8
f. Business location not suited to use of helicopter transportation	51	16.0
g. Concern over safety of helicopters	14	4.4
h. General lack of knowledge about business use of helicopters	5	1.6
i. Other	7	2.2
Total No. Replies	319	100.0

It is interesting to observe that 12.8 per cent of the replies indicated Item d, "Too costly to charter helicopter." Indeed, if the responses to Items c and d are totaled, cost of owning or chartering a helicopter becomes the dominant consideration, with 31.6 per cent of the responses to Question No. 8 indicating concern over cost.[7]

Also of interest is the fact that 11 per cent of the replies observed that no commercial helicopter service is available in Chicago,[8] and 7.6 per cent of the replies noted the general lack of availability of convenient heliports in the Chicago area. These responses, along with the previous findings on demand for helicopter service to O'Hare and Midway, seem to indicate there is possible demand for commercial helicopter service in Chicago.

Continuing, it would appear that the respondents to this survey consider the helicopter to be a safe means of transportation. Only 4.4 per cent of the replies to Question No. 8 indicated concern over safety of helicopters.

A sample of responses received for Question No. 8, Item i, are shown in Appendix "B", below. No single thought or generalization emerges from these replies.

When asked to rank the responses to Question No. 8 in order of importance, fewer respondents elected to do so. However, as may be seen from Table VIII below, the order of importance indicated by those responding to Question No. 9 generally followed the tabulation of replies for Question No. 8. One difference will be observed: Item f, "Business location not suited to use of helicopter transportation" moved into second position, as indicated by the fact this response received the greatest number of second choices. Item c, "Too costly to own and operate helicopter" moved into third position. However, this change from the tabulation for Question No. 8 appears

to be insignificant, since both Items b and c received an equal number of replies.

Clearly, additional research is necessary to determine the reasons underlying the response "Business needs not suited to the use of helicopter." Also, additional research is necessary to determine in what way(s) business location was not suited to the use of helicopter transportation.

With reference to this latter point, one additional tabulation was made with the data in Table VII. The purpose of this tabulation was to classify the location of firms responding to Question No. 8, Item f, "Business location not suited to use of helicopter transportation." The results of this tabulation are shown in Table IX, below.

About 51 per cent of the firms are located in either the North-Northwest or Far Western (Oak Brook) areas of the Chicago metropolitian area. Travel to O'Hare Airport by auto or limousine is relatively easy from these areas. Clearly, this would reduce interest in and need for helicopter service to O'Hare. Several respondents indicated this in their written remarks on the questionnaires. As to the 23.5 per cent of the respondents in a downtown location, it is difficult to discern why they indicated their location was not suited to the use of helicopter transportation. It could be that their physical surroundings preclude the development of a suitable heliport. Or, these respondents may be satisfied with their present means of traveling to O'Hare, to the extent they make this trip. It is also possible that these respondents are not aware of the relatively small space required for a heliport. This same reasoning would apply to those firms located on the north side of Chicago, or in the far outlying towns such as Aurora, Joliet, and Gary. As noted above, more research is necessary to determine the bases upon which this response was made.

Table VIII

Ranking of Reasons Why Helicopter
Not Used for Business Travel
November, 1980

Question

9. Which of the above reasons are most important? Please rank the top three in order of importance.

Response	No. Received
Answer Receiving Greatest Number of First Choices:	
a. Business needs not suited to use of helicopter	37
Answer Receiving Greatest Number of Second Choices:	
f. Business location not suited to use of helicopter transportation	20
Answer Receiving Greatest Number of Third Choices:	
c. Too costly to own and operate helicopter	20

Table IX

Location of Firms Responding to
Question No. 8, Item f, "Business Location
Not Suited to Use of Helicopter Transporation"
November, 1980

Chicago Area	No. Firms	%
North-Northwest	20	39.2
Far West*	6	11.8
Near West	4	7.8
Downtown	12	23.5
South	5	9.8
Other**	4	7.8
Total	51	100.0

*Includes Oakbrook; excludes Aurora, Joliet.
**Includes Aurora, Joliet, and Gary.

The remaining two questions provided opportunity for additional comments regarding the use of helicopters for business travel and the need for a downtown-Chicago public heliport. About 24 per cent of the respondents provided additional comments. Most of these comments are shown in Appendices "C" and "D", below. In some instances, the comments were edited to protect the privacy of the respondent. In general, this limited sample favored both the use of helicopters for business travel and the establishment of a downtown heliport. In some instances, cost effectiveness of both the helicopter and heliport was mentioned as a necessary condition. Also, for a downtown-Chicago heliport, convenience of location was stressed by some. Further, a strong awareness and concern about the cost of operating a helicopter was present in these remarks. Lastly, as was observed earlier in this report, several respondents favored the use of helicopters and the establishment of a downtown-Chicago public heliport. However, these respondents indicated their businesses were located sufficiently close to Chicago airports so that they would not require the use of helicopter transportation.

Summary and Conclusions

The purpose of the survey was to determine the attitudes of Chicago-area chief executive officers and top managers on (1) the use of helicopters for business travel and (2) the establishment of a downtown-Chicago public heliport. The population for this survey was major Chicago-area business firms employing 1,000 or more persons. In Fall, 1980, there were 250 such firms in the Chicago Metropolitan Area. Questionnnaires were mailed to all 250 firms. Chief executive officers and top managers from 131 firms replied, giving a response rate of 52 per cent.

The major findings of this survey are summarized below.[7]

- In 1980, 10.7 (± 3.6) per cent of the respondents traveled by helicopter for business purposes. The frequency of travel for a majority of respondents was evenly distributed between one and four trips per year.

- Among the respondents who did not use helicopters for business travel in 1980, 83.8 (± 4.9) per cent indicated they had flown in a helicopter prior to that year.

- Some 26.9 (± 5.3) per cent of the respondents indicated a downtown-Chicago public heliport with commercial helicopter service to O'Hare Airport would be of use to members of their organizations.

- Another 17.6 (± 4.5) per cent indicated interest in commercial helicopter service to Midway Airport. If commercial airline service resumed at Midway with sufficient frequency, 34.4 (± 5.6) per cent of the respondents would be interested in commercial helicopter service to Midway.

- About 19.8 (± 4.7) per cent of the respondents indicated interest in commercial helicopter service from downtown Chicago to a variety of other locations within the metropolitan area.

- Only 8.4 (± 3.3) per cent of the respondents indicated a downtown-Chicago public heliport without commercial helicopter service would be of use to their firm.

- However, 55.7 (± 5.4) per cent of the respondents indicated belief that Chicago should have a public heliport in the downtown area.[10] The number of respondents in favor of a downtown heliport was 2.35 times the number of respondents who opposed the establishment of such a facility.[11]

- The existence of possible demand for a downtown-Chicago public heliport is indicated by the previously noted findings that almost 27 per cent of the respondents indicated such a facility with commercial helicopter service to O'Hare Airport would be of value to their organization. Almost 18 percent indicated the same would be true for service to Midway.

  This possible demand for a downtown-Chicago public heliport is reinforced by the responses given as reasons why helicopters were not used for business travel. Some 11 per cent of the replies to this question noted no commercial helicopter service is available in Chicago. In addition, about 8 per cent of the replies to this question noted general lack of availabilty of convenient heliports in the Chicago area.[12]

- The primary reasons given for not using the helicopter for business travel were (1) business needs not suited to use of helicopter; (2) too costly to own and operate; and (3) business location not suited to use of helicopter transportation.

- If comments indicating that it is too costly to charter a helicopter are added to comments that it is too costly to own and operate a helicopter, then cost becomes the primary factor limiting helicopter usage. Almost 32 per cent of the total responses given in answer to why helicopters were not used for business travel indicated that it was too costly to own or charter these machines.[13]

- Only 4.4 per cent of the total responses given in answer to why helicoptors were not used for business travel indicated concern over safety.[14]

- About 24 per cent of the respondents provided additional comments to open-ended questions on the use of helicopters for business travel and the need for a downtown-Chicago public heliport. In general, these responses favored both the use of helicopters for business travel and the establishment of a downtown-Chicago public heliport. Concern over cost effectiveness of both the helicopter and heliport was mentioned by some as a necessary condition. Convenience of heliport location was also stressed.

- Throughout the survey, many firms noted that they were sufficiently close to O'Hare Airport to not warrant the use of helicopter transportation. Also, several firms in downtown Chicago considered their location was not suited to the use of helicopter transportation.

In conclusion, a majority of Chicago-area chief executive officers and top managers surveyed believe Chicago should have a public heliport in the downtown area. A significant portion of the respondents indicated interest in commercial helicopter service from downtown to O'Hare Airport. Similar interest in service to Midway Airport was evidenced, particularly if the volume of commercial aircraft operations at Midway increased. Only about 8 per cent of the respondents indicated a downtown heliport without commercial helicopter service would be of use to their firm.

When reflecting upon the lack of a public heliport in Chicago, it is useful to observe that the cities of New York and Los Angeles each have five public heliports. As noted earlier, in the case of New York City all five heliports are located on Manhattan Island. In 1979, these heliports generated one-fourth the number of aircraft operations at La Guardia Airport. It is believed that the existence of these public heliports has helped to reduce the exodus of major corporations from New York City.

In light of the findings drawn from this survey of Chicago-area chief executive officers and top managers, together with the examples of New York City and Los Angeles, the authors believe it would be a proper course of action for the City of Chicago to consider the development of one or more heliports within the city and its environs. We strongly recommend that City of Chicago officials and planners proceed in this direction.

APPENDIX "A"

QUESTIONNAIRE

CHICAGO ASSOCIATION OF COMMERCE & INDUSTRY

AND

UNIVERSITY OF ILLINOIS AT CHICAGO

SURVEY OF HELICOPTER TRAVEL
BY CHICAGO-AREA CHIEF EXECUTIVE OFFICERS
AND TOP MANAGERS

1. Have you used a helicopter for business travel during the past year?

Yes_____ No_____

a. If "Yes," approximately how many trips by helicopter did you take during the past year?

No. of trips_____

b. If "Yes," were those trips:

(1) mostly within the Chicago Metropolitan Area? _____

(2) mostly regional (from here to destinations approximately 100-150 miles from the Chicago Metropolitan Area)? _____

(3) a combination of both? _____

(4) if a combination, approximately what percentage of the trips was regional? _____%

(5) Other: _____

_____

2. If the answer to Question No. 1 was "No," have you ever flown in a helicopter?

Yes_____ No_____

APPENDIX "A," continued

3. Would a downtown-Chicago public heliport be of use to you or other members of your organization in the conduct of your business if a commercial helicopter service between downtown and O'Hare Airport were available at a reasonable fare?

Yes_____ No_____

4. Would commercial helicopter service from downtown Chicago to Midway Airport be of use to you or other members of your organization in the conduct of your business?

Yes_____ No_____

a. If "No," would such a service be useful if commercial airline service resumed at Midway with sufficient frequency?

Yes_____ No_____

5. Would commercial helicopter service from a downtown heliport to other destinations in the Chicago Metropolitan Area at reasonable fares be of use to you or other members of your organization?

Yes_____ No_____

a. If "Yes," what additional destinations would you select?

_____

_____

6. Would a downtown-Chicago public heliport <u>without</u> commercial helicopter service be of value to you or your firm?

Yes_____ No_____

7. Do you believe Chicago should have a public heliport in the downtown area?

Yes_____ No_____

8. If you do not use helicopters for business travel, would you please indicate why:

a. Business needs not suited to use of helicopter _____

b. No commercial helicopter service available _____

c. Too costly to own and operate helicopter _____

d. Too costly to charter helicopter _____

APPENDIX "A," continued

e. General lack of availability of convenient heliports _____

f. Business location not suited to use of helicopter transportation _____

g. Concern over safety of helicopters _____

h. General lack of knowledge about business use of helicopters _____

i. Other: _____

_____

9. Which of the above reasons are most important? Please rank the top three in order of importance:

a. _____	d. _____	g. _____
b. _____	e. _____	h. _____
c. _____	f. _____	i. _____

10. Do you have any remarks in general regarding the use of helicopters for business travel?

11. Do you have any additional comments concerning the need for and possible development of a downtown-Chicago public heliport?

Thank you very much for your cooperation in completing this questionnaire.

APPENDIX "B"

Sample Responses to Question No. 8, Item i, "Other"
November, 1980

Reply

"Business needs have not reached the size to justify a helicopter in our aviation department."

"Really, just no need for service."

"Did set up heliport at (deleted by authors) but usage was not cost effective."

"Lacks all-weather capabilities."

"We are located very near to O'Hare so driving there isn't a problem."

"Would only need to use occasionally."

APPENDIX "C"

Sample Responses to Question No. 10, "Do You Have Any Remarks in General Regarding the Use of Helicopters for Business Travel?"

"Very convenient and efficient."

"Expense does not justify slight savings in time."

"Now that Midway is working, our people could occasionally use a Midway-O'Hare trip if price were right."

"Must be cost effective."

"We have often commented that the access to a helicopter would be most beneficial during certain periods."

"Effective in San Francisco-Oakland Area."

"Makes a lot of sense -- especially considering the absurdly unpredictable trip out the Kennedy to O'Hare!"

"Most of our helicoptor travel is done only on an emergency basis."

"We would ..... use a helicopter for transportation between ..... and ..... if there were adequate facilities in Chicago."

"We charter 'copters for ..... surveys, to visit Divisonial Hdqs., for Board of Director field trips, both in the state and to ....."

"It would be rare for our people to make use of the service."

"Too expensive. Too dangerous."

"As airports are closed or consolidate, it would seem that the need for helicopters and heliports will increase."

"Can go by auto to exactly where I need -- better than helicopter and taxi."

APPENDIX "C," continued

"Future potential? Safety?"

"Perhaps later -- after costs go down considerably."

"I formerly traveled to NYC frequently; I would use the helicopter service to the roof of the Pan Am Building and found it very convenient and time saving. We are located in ..... Very convenient by limo to O'Hare."

"Service should be available from downtown to O'Hare and Midway. And, should go between O'Hare and Midway."

"I use helicopters in New York when schedule requires paying the added cost."

"In general, helicopter service could be a practical mode of transportation for us if:

"a. We were permitted to have a heliport on our premises .....; and

"b. If there were public heliports strategically located elsewhere in the Chicago Metropolitan Area."

"I have used helicopters in Los Angeles for special purposes. They are great but too costly today for all but a very few purposes."

"In my few cases of use of a helicopter the time savings were not critical and the costs were excessive compared to other transportation means."

"Range too limited. Passenger load limited."

"While we do not have need of a mid-town heliport at this time, development of a new ..... approximately ..... will change our need ....."

"I believe they are valuable in many instances and I'm generally in favor with your idea."

"Slow, not suited for long distance."

APPENDIX "C," continued

"Fine, in right situation."

"Perhaps helicopter service between O'Hare and Midway would be used, provided of course that Midway gets more commercial flights."

"Excellent for specific uses."

"Its growth is obvious. Heliports are needed now."

APPENDIX "D"

Sample Responses to Question No. 11, "Do You Have Any Additional Comments Concerning the Need for and Possible Development of a Downtown-Chicago Public Heliport?"

"A heliport connecting Chicago with Oak Brook, O'Hare, and possibly one or two of the North Shore towns would be useful."

"Must be cost effective."

"Must be in convenient Loop location. No long or slow cab rides, if possible. Perhaps have 'roof-top' shuttle (several) in loop area to major loop heliport to avoid difficult cab rides."

"Maintain our position in dealing with competitor cities."

"Being suburban based, helicopter service would be of special benefit where the periodic, lengthy expressway repairs are underway. For example, we would charter a unit during such a period."

"Not a bad idea -- problem is timing. When will helio's be a safe, moderate cost form of transportation?"

"Please understand this reply is generally unfavorable, but my business location puts me within a 20 minute cab ride to O'Hare or Midway at non-rush hours."

"Probably useful for companies located in the Loop, from O'Hare and from Midway later."

"If a convenient downtown location (heliport) could be found (say at river and Wacker), many travelers from out-of-town would appreciate the convenience. Extra cost would be measured against the value of the traveler's time."

"Definitely needed."

"Chicago is big enough, has enough traffic jams, and is spread out enough to have commercial helicopter service. I would not use it because I am convenient to both airports, don't mind driving, and can schedule my departures and arrivals to avoid Kennedy traffic jams. My elapsed time would be greater using a helicopter."

FOOTNOTES

[1]Aerospace Industries Association, Heliports in the United States, Canada, and Puerto Rico, 1977-1778, pps. 33-41; 179-180.

[2]"The Helicopter Industry's Greatest Problem? No Place to Land," Aviation Week and Space Technology, February 11, 1980, p. 53.

[3]Ibid.; Statement of Richard G. Stutz, Chairman, Heliports and Airways Action Group, Helicopter Association of America.

[4]Chicago Association of Commerce and Industry, 1980 Metropolitan Chicago Major Employers, pp. 1-121.

[5]The formula for deriving the standard error of the proportion is:

$$s_p = \sqrt{\frac{p \cdot q}{n} \cdot \frac{N - n}{N}}$$

s_p = standard error of the proportion

p = proportion of the sample possessing a certain attribute

q = $(1 - p)$ or proportion of sample not having that attribute

n = sample size

N = population size

The 95 per cent confidence interval is $p \pm 1.96\ (s_p)$.

[6]It is not possible to calculate a confidence interval for the responses given in Question No. 8. Each possible response to that question does not have an equal opportunity of being chosen. For example, a respondent's choice of Item a, "Business needs not suited to use of helicopter" could eliminate the basis for choosing any other response. The same is true for Item h, "General lack of knowledge about business use of helicopters."

[7]Same as Footnote 6.

[8]This refers to scheduled commercial helicopter service.

[9]As noted, all confidence intervals are calculated at the .95 level.

[10]See Table VIII above, for calculation of confidence interval.

[11]This calculation excludes those who were undecided.

[12]Same as Footnote 6.

[13]Same as Footnote 6.

[14]Same as Footnote 6.

ACKNOWLEDGEMENT

The authors wish to express their appreciation to the chief executive officers and top managers who participated in this survey. The wide response to our questionnaire has been most helpful in attempting to discern the sentiments of the Chicago-area business community toward the use of helicopters for business travel. Any errors in the study are of course the responsibility of the authors.

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