

An Ordinance
Establishing Airport Zoning Regulations
for the
KALAMAZOO MUNICIPAL AIRPORT
Kalamazoo, Michigan

Adopted Tuesday, July 27, 1954, by the Joint Kalamazoo Municipal Airport Zoning Board, which was created by the Kalamazoo County Board of Supervisors, the City of Kalamazoo, and the State Aeronautics Commission under the authority of Act No. 23, Public Acts of 1950 (Extra Session).

Effective date of Ordinance, Saturday, September 25, 1954.

Amended Wednesday, December 7, 1960, by Joint Kalamazoo Municipal Airport Zoning Board.

Amended *May 20, 1971*, by Joint Kalamazoo Municipal Airport Zoning Board.

JOINT KALAMAZOO MUNICIPAL AIRPORT ZONING BOARD

<u>Member</u>	<u>Representing</u>
Charles M. Waddle, Chairman	Kalamazoo County
George M. Savage, Vice-Chairman	Kalamazoo County
Howard B. Newman	Kalamazoo County
Carl Walker	City of Kalamazoo
Harold Oliver	Michigan Aeronautics Commission

ADMINISTRATIVE AGENCY

Director of Kalamazoo Municipal Airport

BOARD OF APPEALS

E.
William ~~E.~~ Hendrick
Jacob W. Hoogendyk
Dr. Thomas J. Reigel
William A. Ripatte
Richard C. Walsh

ORDINANCE

An Ordinance establishing airport zoning regulations restricting the height of structures and objects of natural growth and otherwise regulating the use of property in the vicinity of the Kalamazoo Municipal Airport, providing for the allowance of variances from such regulations; designating the administrative agency charged with the administration and enforcement of such regulations; establishing an airport zoning board of appeals; and providing for enforcement and imposing penalties for violation of this ordinance.

Pursuant to the authority conferred by the provisions of Act No. 23 of the Public Acts of the State of Michigan for the year 1950 (Extra Session) and for the purpose of promoting the health, safety and general welfare of the inhabitants of the County of Kalamazoo by preventing the establishment of airport hazards and thereby protecting the general public, users of the Kalamazoo Municipal Airport and occupants of land in its vicinity, and preventing the destruction and impairment of the utility of said airport and the public investment therein:

The Joint Kalamazoo Municipal Airport Zoning Board, composed of representatives appointed by the Board of Supervisors of Kalamazoo County, the City of Kalamazoo and the State Aeronautics Commission, does hereby ordain as follows:

Section 1. For the purposes of this Ordinance, the words, terms and phrases set forth in Sections 2 through 11 inclusive, shall have the meanings prescribed in such sections.

Section 2. The term "Agency", when used in this ordinance, means the director of airports, City of Kalamazoo, 5235 Portage Rd., Kalamazoo, Michigan, which is hereinafter designated and charged with the administration and enforcement of the provisions of this ordinance.

Section 3. The term "Airport" when used in this ordinance means the Kalamazoo Municipal Airport and all appurtenances used or acquired for airport buildings or other airport facilities, and all other appurtenant rights of way or other interests either heretofore or hereafter established.

Section 4. The term "airport hazard" when used in this ordinance means any structure or tree within the airport hazard area which exceeds the height limitations established by this ordinance, or any use of land or of appurtenances thereto contrary to the provisions of this ordinance within the airport hazard area which interferes with the safe use of the airport by aircraft.

Section 5. The term "airport hazard area" when used in this ordinance means any area of land or water, or both, lying within a ten mile radius from the established center of the Kalamazoo Municipal Airport.

Section 6. The term "Board" when used in this ordinance means the Board of Appeals as hereinafter created and designated.

Section 7. The term "above mean sea level" when used in this ordinance or on the accompanying maps denotes elevations above sea level as based upon and determined by reference to United States Coast and Geodetic Survey datum.

Section 8. The term "non-conforming use" when used in this ordinance means any structure, tree or use of land which does not conform to a regulation prescribed in this ordinance or any amendment thereto as of the effective date of such regulation.

Section 9. The term "person" when used in this ordinance means any individual, firm, partnership, corporation, company, association, joint stock association, municipal corporation or other body politic, and including any trustee, receiver, assignee or other similar representative thereof.

Section 10. The term "structure" when used in this ordinance means any object constructed or installed by man, including, but without limitation, buildings, towers, smokestacks, overhead transmission lines, radio and television aeriels and antennae, but not including highways and their appurtenances.

Section 11. The term "tree" when used in this ordinance means any object of natural growth.

Section 12. There is hereby created a zone consisting of all of the lands within Kalamazoo County lying beneath the approach, transitional, 150 ft. horizontal, conical and 500 ft. horizontal surfaces. This land is located within a circle having a radius extending horizontally 10 miles from the established center of usable landing area of the airport. The boundaries of the several surfaces listed above are shown on the Kalamazoo Municipal Airport Zoning Plans numbered 1 through 18, as revised 6-3-60 and numbered 2-1 through 2-5 dated 6-3-60, which maps are attached hereto and hereby made a part hereof. There are hereby imposed on said lands height limitations as shown on the attached airport zoning plans. These height limitations are based upon the elevations above mean sea level at the ends of the respective Kalamazoo Municipal Airport runways and the established elevation of the airport, which elevations are shown on sheet 2 of the zoning plans.

Section 13. All of the lands within the above zone, as shown on the aforesaid airport zoning maps, are hereby determined to be an airport hazard area within which any violation of the applicable height limitations or use

restrictions shall constitute an airport hazard.

From and after the effective date of this ordinance it shall be unlawful within any of the zones hereinbefore established, for any person to:

- (a) Erect any structure to a height in excess of the limitations prescribed by the terms of this ordinance and the attached airport zoning maps.
- (b) Allow any tree to grow to a height in excess of the limitations prescribed by the terms of this ordinance and the attached airport zoning maps.
- (c) Establish any use of lands contrary to the provisions of this ordinance.

The height limitations on the land lying beneath the approach and transitional surfaces are based upon the elevation above mean sea level of the several runway ends, at the Kalamazoo Municipal Airport as set forth on sheet 2 of the Zoning Plans. Because it is impractical to determine the ground elevation on all parcels of land designated as hazard areas, it is conceivable that some parcels of land located in the immediate vicinity of the airport have been restricted to a height limitation of less than 25 feet above the existing ground level as of the effective date of this ordinance. The intent of this ordinance is to impose a minimum height restriction of 25 feet above the existing ground level as of the effective date of this ordinance. Therefore, the Agency is authorized and hereby directed to approve all applications for permits to build a structure, or transplant a non-conforming tree or allow it to grow up to a height of 25 feet above the existing ground level as of the effective date of this ordinance.

Section 14. The transitional, approach and conical surfaces are imaginary inclined surfaces, which allow a greater height limitation as the distance

from the airport is increased; therefore, the Agency hereby is authorized upon application made to it to permit a structure to be built or a tree to be transplanted or allowed to grow up to the height of its intersection with the imaginary inclined surface, the height limitations between the aerial contours shown on the zoning plans may be interpolated. The approach, transitional and conical surfaces are fully described on sheet 18 of the zoning plans, and in paragraph A through A-3, inclusive, C and D of the Michigan Department of Aeronautics Approach Standard, Part I, dated April 1, 1952, which is attached hereto and hereby made a part of this ordinance for reference purposes.

Section 15. The regulations prescribed in Section 12 of this ordinance shall not be construed to require the removal, lowering or other change or alteration of any structure or tree not conforming to the regulations as of the effective date hereof, or otherwise interfering with the continuance of any non-conforming use. Nothing contained in said section shall require any change in the construction, alteration, or intended use of any structure, the construction or alteration of which was begun prior to the effective date of this ordinance and is diligently prosecuted and completed within a reasonable time thereafter.

Section 16. From and after the effective date of this ordinance no structure shall be erected and no non-conforming tree shall be transplanted or allowed to grow to attain a height in excess of the filing height limitations within the airport hazard area unless a permit therefore shall have first been applied for and obtained from the Administrative Agency.

The permit requirements for the land descriptions hereinafter set forth are as follows:

PERMIT REQUIREMENTS

This airport zoning ordinance is not intended to conflict with existing Federal Approach protection laws. The Federal Aviation Administration requires that they be given notice of construction or alteration of any structure along or within twenty miles of a civil airway, the top or any portion of which is, or may become, by reason of such construction or alteration, greater than one hundred and fifty feet above ground level, or above mean water level (where the structure is, or will be, situated in, or over, navigable water). Also, notice should be given of all structures within fifteen thousand feet of the nearest boundary of a landing area located along, or within twenty miles of a civil airway, the top or any portion of which, by reason of such construction or alteration exceeds in actual height the approximate ratio of 1:100 from the nearest boundary of a landing area.

1 - TOWNSHIP OF PORTAGE R.11W., T3S, County of Kalamazoo.

a - W.1/2 of Section 1, E. 1/2 of Section 2, S.W. 1/4 Section 2,
N. 1/2 of N.W. 1/4 Section 11, N. 3/4 of E. 1/2 of E. 1/2
Section 11, N. 3/4 of W. 1/2 of W. 1/2 of Section 12.

A permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in excess of 20 feet above the ground within this hazard area, except the following described parcel located in and adjacent to the aircraft approach area in the east approach of the Kalamazoo Municipal Airport:

A parcel of land commencing at the south one quarter post of Section 1,
T. 3 S., R. 11 W., thence west along the south line of said Section 1, to

the east right-of-way-line of the Penn Central Railroad (formerly the Pennsylvania Railroad) thence north along the said railroad right-of-way line 1375 feet more or less to a point opposite the center line of the east and west Airport runway, extended easterly, to the place of beginning. Thence continuing north along the said railroad right-of-way 500 feet, thence east and parallel to the south line of Section 1, 1000 feet, thence south and parallel to the N. & S. 1/4 line of said Section 1, 1000 feet, thence west and parallel to the south line of said Section 1, 1000 feet more or less to the east right-of-way line of the Penn Central Railroad, thence north along said railroad right-of-way line, 500 feet more or less to the place of beginning.

A permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in excess of the following:

Commencing at a height of 882.79 feet mean sea level extending along the western most boundary of the above described parcel of property and extending in an inclined plane to a height of 912.79 feet mean sea level extending along the eastern most boundary of the property described above.

b - E. 1/2 of W. 1/2 of Section 12, S. W. 1/4 of S.W. 1/4 of Section 12.

A permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in excess of 25 feet

above ground within this hazard area.

- c - W. 1/2 of S.E. 1/4 of Section 1, E. 1/2 of S.E. 1/4 of Section 3, E. 1/2 of N.E. 1/4 of Section 10, S.W. 1/4 of N.W. 1/4 Section 11, S.E. 1/4 of S.E. 1/4 Section 11, N. 1/2 of N.W. 1/4 Section 13, -

A permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in excess of 40 feet above ground within this hazard area.

- d - S.E. 1/4 of N.W. 1/4 of Section 11.

A permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in excess of 60 feet above ground within this hazard area.

- e - Within all other areas of Portage Township a permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in excess of 75 feet above ground.

2 - TOWNSHIP OF KALAMAZOO R.11W., T2S, County of Kalamazoo

- a - S. 1/2 of S.W. 1/4 section 36.

A permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in

excess of 20 feet above ground within this hazard area.

b - S. 1/2 of S.E. 1/4 section 35.

A permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in excess of 25 feet above ground within this hazard area.

c - N. 1/2 of S.E. 1/4 section 35, N.E. 1/4 of S.W. 1/4 section 36, W. 1/2 of S.E. 1/4 section 36.

A permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in excess of 40 feet above ground within this hazard area,

d - S. 1/2 of N.E. 1/4 section 35, S.W. 1/4 of N.W. 1/4 section 36, N.W. 1/4 of S.W. 1/4 section 36, S. 1/2 of N.E. 1/4 section 36, N.E. 1/4 of S.E. 1/4 section 36.

A permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in excess of 60 feet above ground within this hazard area.

e - Within all other areas of Kalamazoo Township, including the City of Kalamazoo and the City of Parchment, a permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in excess of 75 feet above ground.

3 - Within the fractional parts of Alamo, Cooper, Richland, Oshtemo, Charleston,

Texas, Climax, Praire Ronde, Schoolcraft, Brady, Wakeshma lying within ten miles of the airport and all of Comstock and Pavilion Townships and the City of Galesburg, a permit must be obtained from the administrative agency before any structure may be erected or any non-conforming tree may be planted or allowed to grow, which can reasonably be expected to attain a height in excess of 100 feet above ground.

Section 17. Any existing structure within the airport hazard area which conforms to the regulations prescribed by the terms of this Ordinance may be replaced, altered, repaired or rebuilt so long as such alteration or change does not increase the height thereof.

Before any existing structure may be replaced, altered, repaired or rebuilt in such a manner as to increase the height thereof, and before any existing non-conforming tree may be replanted or allowed to grow higher, within the airport hazard area, a permit authorizing such change must be applied for and obtained from the agency; provided, however, that the permit requirements for the replacement, alteration, repair or rebuilding of any existing structure or the replanting of any tree within the airport hazard area shall be the same as the permit requirements for the land descriptions set forth in Section 16.

No permit shall be granted that would allow an existing structure or non-conforming tree to become an airport hazard, or permit a non-conforming structure or tree to become a greater hazard to air navigation than it was on the effective date of this ordinance or than it is when the application for a permit is made, or that would conflict with any general zoning ordinance or regulation applicable to the same area.

Whenever the Agency determines that a non-conforming structure or tree has been abandoned or more than 80% torn down, destroyed, deteriorated, or decayed, no permit shall be granted that would allow such structure or tree to exceed the applicable height limitation or otherwise deviate from the regulations herein contained; provided, however, no application for a permit shall be required for the emergency repair or replacement of non-conforming public utility structures, other than buildings, to insure continuity of proper customer service, when the

height of such structures is not increased by such emergency repair or replacement; provided, further, that any combination of circumstances calling for immediate action or remedy in the repair or replacement of such non-conforming public utility structures shall be deemed an emergency.

Section 18. All applications for permits required under the terms of this ordinance shall be on a form prescribed by the Agency and shall clearly indicate the purpose for which a permit is desired with sufficient particularity to permit the Agency to determine whether the proposed structure, tree or use of land would conform to the regulations herein prescribed. If, upon examination, the Agency shall find that the proposed structure, tree or use of land would conform to the regulations herein prescribed, the permit applied for shall be granted within 15 days after the application was filed.

Section 19. Any person desiring to erect any structure, increase the height of any structure, permit the growth of any tree, or otherwise use his property in violation of the regulations imposed by the terms of this ordinance or adopted under the authority herein contained, may apply to the Board of Appeals, hereinafter created, for a variance from the zoning regulation in question. Such a variance shall be allowed where a literal application or enforcement of such regulations would result in practical difficulty or unnecessary hardship and the relief granted would not be contrary to the public interest and approach protection, but would do substantial justice and be in accordance with the spirit of the regulations of this ordinance; provided, however, that any such variance may be allowed subject to any reasonable condition or conditions subsequent that the Board of Appeals may deem necessary to effectuate the purpose of this ordinance. Nothing in this section authorizes the allowance of any variance which would conflict with any general zoning ordinance or regulation applicable to the same area.

Section 20. The director of airports, City of Kalamazoo, is hereby designated the administrative agency charged with the duty of administering and enforcing the regulations herein prescribed. The duties of such agency shall include that of hearing and deciding all permits under Sections 16 and 17, but said agency shall not have or exercise any of the powers or duties herein delegated to the board. The agency may adopt such rules and regulations as may be necessary in connection with its administration and enforcement of this ordinance.

Section 21. There is hereby created a Board of Appeals to have and exercise the following powers:

- (a) To hear and decide appeals from any order, requirement, decision or determination made by the Agency in the enforcement of this ordinance.
- (b) To hear and decide specific variances under Section 19.

The Board of Appeals shall consist of five members, each to be appointed for a term of 3 years and until his successor is appointed and qualified, one of whom shall be designated as Chairman and one whom shall be designated as Vice-Chairman, which appointments shall be made by the joint airport zoning board. Said members shall be removable by the appointing body for cause shown, upon written charges and after notice and opportunity for public hearing before the appointing body.

The concurring vote of a majority of the members of the Board of Appeals shall be sufficient for all purposes, including the reversal of any order, requirement, decision or determination of the Agency or a decision in favor of the applicant on any matter upon which it is required to pass under this ordinance, or to effect any variation in the regulations herein prescribed.

The Board of Appeals shall adopt rules concerning its organization and procedure and other authorized matters, consistent with the provisions of this ordinance. Meetings of the Board of Appeals shall be held at the call of the Chairman and at such other times as said Board may determine and notice of all meetings shall be given by the Chairman to all members. The Chairman, or in his absence the Vice-Chairman, may administer oaths or affirmations and issue subpoenas to compel the attendance of witnesses. All hearings of the Board of Appeals shall be public. The Board of Appeals shall keep minutes of its proceedings, showing the vote of each member upon each question, or if absent or failing to vote, indicating such fact, and shall keep records of its examinations and other official acts, all of which shall be immediately filed in the offices of the Board and shall be a public record.

The Board of Appeals shall receive such compensation for attendance and expenses, and may employ such necessary personnel, as may be provided for by resolution of the Joint Airport Zoning Board.

The Board of Appeals shall be officially known as the Kalamazoo Municipal Airport Zoning Board of Appeals.

Section 22. Any person aggrieved, or the governing body of any political subdivision affected, by any decision of the Agency made in its administration of this ordinance, may appeal to the Board of Appeals.

All appeals hereunder must be taken within 60 days after rejection of the application by the agency, as provided by the rules of the Board of Appeals, by filing with the agency and with the board, a notice of appeal specifying the grounds therefore. The Agency shall forthwith transmit to the Board all the paper constituting the record upon which the action appealed from was taken. An appeal

shall stay all proceedings in furtherance of the action appealed from, unless the Agency certifies to the Board, after the notice of appeal has been filed with it, that by reason of the facts stated in the certificate a stay would, in its opinion, cause imminent peril to life or irreparable damage to property. In such case, proceedings shall not be stayed otherwise than by order of the Board and on due cause shown. The Board shall fix a time for the hearing of the appeal, give public notice and due notice of the parties in interest, and decide the same within a reasonable time. Upon hearing, any party in interest may appear in person or by agent or by attorney. The Board may, in conformity with the provisions of this ordinance, reverse or affirm, wholly or partly, or modify, the order, requirement, decision or determination appealed from and may make such order, requirement, decision or determination as it deems advisable to make, and to that end shall have all the powers of the Agency.

Section 23. Any person, including the Michigan Aeronautics Commission on behalf of and in the name of the State, aggrieved by any decision of the Board of Appeals, may appeal to the Circuit Court of the County of Kalamazoo, as provided in Section 30 of Act No. 23, of the Public Acts of the State of Michigan for the year 1950 (Extra Session).

Section 24. Any person who shall violate this ordinance or any regulations orders or rulings promulgated or made pursuant to this ordinance, shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not more than \$100.00 and imprisonment for a term not to exceed 90 days, and each day a violation continues to exist after notice shall constitute a separate offense. Such notice may be given by the Agency by registered mail addressed to the person maintaining such violation.

In addition, the Joint Airport Zoning Board adopting airport zoning regulations under this act may institute in the Circuit Court of the Kalamazoo

County, an action to prevent, restrain, correct or abate any violation of this act, or of airport zoning regulations adopted under this act, or of any order or ruling made in connection with their administration or enforcement, and the court shall adjudge to the plaintiff such relief, by way of injunction (which may be mandatory) or otherwise, as may be proper under all the facts and circumstances of the case, in order to effectuate fully the purposes of this act and the regulations adopted and orders and rulings made pursuant thereto.

Section 25. If any of the provisions of this ordinance or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the ordinance which can be given effect without the invalid provisions or applications of the ordinance, and to this end the provisions of this ordinance are declared to be severable.

Section 26. This ordinance shall be known and may be cited as the Kalamazoo Municipal Airport Zoning ordinance.

Section 27. This ordinance, and the regulations prescribed herein may be amended by a majority of vote of all members of the Joint Airport Zoning Board, after a public hearing is held in relation to the proposed amendment.

Amended -

The original portions of this ordinance which relate to the Northwest-Southeast runway shall remain in full force and effect until such time as the City of Kalamazoo gives official notice of the phasing out of said runway. This phasing out is to occur as and when the new North-South runway is commissioned.

STATE OF MICHIGAN
DEPARTMENT OF AERONAUTICS
CAPITAL CITY AIRPORT
LANSING, MICHIGAN

APPROACH STANDARD PART I.

Subject: Criteria for determining the limiting height to which a structure or tree may be built or allowed to grow.

Introduction: In order to accomplish the aims of the Aeronautics Code of the State of Michigan and Act No. 23, Public Acts of 1950, also known as the "Airport Zoning Act", this standard has been developed by the Michigan Department of Aeronautics.

This standard is the official Michigan Department of Aeronautics guide for determining obstructions to air navigation for all airports within the State of Michigan and supersedes all existing obstruction criteria which do not conform to its requirements.

The approach requirements of the Civil Aeronautics Administration TSO-M18 section "A" and the Airforce Regulation No. 86-3 are included in this standard. If this standard is in conflict with the current Civil Aeronautics Administration approach standard, the standard which is the most restrictive shall control.

Procedure for determining obstructions.

A man-made structure or object of natural growth which projects above the landing area or any of the airport referenced imaginary surfaces described below and on the current standard approach drawings SI-A 672 for Secondary, Feeder, Trunkline, Express, Continental, Intercontinental, Intercontinental Express, military type airport and the standard approach drawing for an instrument runway, including Civil Aeronautics Administration drawing No. 3-C-2607, should be considered an obstruction to air navigation.

I. Airport referenced imaginary surfaces.

These imaginary surfaces are established by reference to the airport as described below and consist of the approach surfaces, 150 ft. horizontal surface, conical surface, transitional surfaces, connecting surface and 500 ft. turning zone surface.

A - Approach Surfaces

The approach surface is an inclined plane located directly above the approach area for civilian airport. The approach surface for a military type airport is a combination of an inclined plane and a flat plane. The dimensions of the approach area are measured horizontally.

A 1 - Length

The approach area has a length of 10,000 feet beginning 200 feet outward from the end of each runway and extending outward, ending at a point 10,200 feet from the end of the runway on the extended center line of the runway. (For military airfields the approach area has a length of 25,000 ft. beginning 1,000 feet outward from the end of each runway and extending outward, ending at a point 26,000 feet from the end of the runway on the extended center line of the runway). In addition, the approach areas of all runways which may be used for instrument operation shall extend outward to the intersection of the 500 ft. turning zone surface. The approach area requirements for instrument runways shall apply to all runways which may be used for instrument operations and to both ends of such runways.

A 2 - Width

The approach area is symmetrically located with respect to the extended runway center line. For all instrument runways the approach area has a total width of 1,000 feet at the end adjacent to the runway and flares uniformly to a total width of 4,000 feet at the end of the 10,000 foot section and continues on this same flare until the approach surface intersects the 500 foot turning zone surface. (For military air bases the approach area is symmetrically located with respect to the extended runway center line, and for all runways has a total width of 1,500 feet at the end adjacent to the runway. The approach area flares uniformly to a total width of 4,000 feet at the end of the 10,000 foot section and remains at this width until the 25,000 foot section is reached). For all other runways not intended for instrument operation, the approach area has a total width at the end adjacent to the runway, and at the approach end respectively as follows: for Express Air Carrier Service and larger airports, 500 feet and 2,500 feet; for Trunkline Air Carrier Service Airport, 400 feet and 2,400 feet; for Feeder Air Carrier Service airports, 300 feet and 2,300 feet; for Secondary airports with runways 2301' - 3,000' length, 250 feet and 2,250 feet; for Secondary airports with runways 1,500' - 2,300' length, 200 feet and 2,200 feet.

A 3 - Slope

For instrument runways the slope of the approach surface along the runway center line extended is 50:1 for the inner 10,000 foot section and 40:1 for outer section. This 40:1 plane continues until it intersects the 500 ft. turning zone surface. For military runways the slope of the approach surface along the runway center line extended is 50:1 for the 10,000 foot section. The approach surface between the 10,000 foot section and the 25,000 ft. section is horizontal. For all other runways, not intended for instrument operation, which meet or exceed the minimum runway length requirements for Feeder Air Carrier Service, the slope is 40:1. On airports with shorter runway lengths than those specified for Feeder Air Carrier Service, the slope of the approach surface is 20:1 for all runways.

B - 150 Foot Horizontal Surface

This horizontal surface is a plane, circular in shape, with its height 150 feet above the established elevation of the airport, which is the highest point on the usable landing area, and having a radius from the airport reference point, which is the center of the usable landing area, as indicated in the following table:

Intercontinental Express Airports and Military Air Bases	13,000 feet
Intercontinental Airports	11,500 feet
Continental Airports	10,000 feet
Express Airports	8,500 feet
Trunkline Airports	7,000 feet
Feeder Airports	6,000 feet
Secondary Airports	5,000 feet

C - Conical Surface

The conical surface extends upward and outward from the periphery of the horizontal surface with a slope of 20:1 measured in a vertical plane passing through the airport reference point. Measuring radially outward, from the periphery of the horizontal surface, the conical surface extends outward until a height of 500 feet above the established elevation of the airport is reached.

D - Transitional Surfaces

The transitional surfaces are inclined planes with a slope of 7:1 measured upward and outward in a vertical plane at right angles to the center line or extended center line of the runway. The transitional surfaces, symmetrically located on either side of the runway, extend upward and outward from a line on either side of the runway, which is

D - Transitional Surfaces (Continued)

parallel to and level with the runway center line. These parallel lines are at a horizontal distance from the runway center line equal to one-half of the minimum width of the approach area indicated in A-2 above. Transitional surfaces extend from the edges of all approach surfaces upward and outward to the intersection with the 150 foot horizontal surface, conical surface, or the 500 foot turning zone surface.

E - Connecting Surface

For military air bases and for civilian airports with a runway which is designated for military operations, the outer edge of the approach surface, 25,000 foot section, is jointed to the 500 foot turning zone surface by a connecting surface, which is an inclined plane with a slope of 7:1.

F - 500 Foot Turning Zone Surface

This horizontal surface is a plane, circular in shape, with its height 500 feet above the established airport elevation and having a radius from the airport reference point of 10 miles. This 500 foot turning zone surface applies to all airports, which meet or exceed the minimum runway length requirements for Feeder Air Carrier Service.

APPROACH STANDARD PART II

Subject: Criteria for marking a potential hazard to air navigation.

Introduction: A potential hazard to air navigation is a structure or tree that meets the height requirements of Part I of this standard; but, by reason of the height and location of the structure or tree relative to the landing area of the airport, it constitutes a hazard to the safe operation of aircraft in the vicinity of the airport. These potential hazards should be marked conspicuously by painting or lighting or both according to current standards, so that the pilots can stay clear of them. The following standard is a guide to determine those structures and trees, which should be marked. This hazard marking standard should not be interpreted as meaning that a structure could exceed the height limitations of Part I, which is the maximum allowable height a structure or tree may be constructed or allowed to grow.

II. Potential Hazard Marking Guide

A - Feeder and larger type airports

All structures and trees that project above an imaginary inclined plane located fifty feet above the established elevation of the airport at the nearest airport boundary line and increasing to a height of one hundred and fifty foot height above the established elevation of the airport at a distance of three miles from the nearest airport boundary line. This one hundred and fifty foot height continues to a distance of ten miles from the nearest boundary of the airport. Beyond this ten mile limit the Civil Aeronautics Administration specifications shall apply.

B - Secondary Type Airports

All structures and trees that project above an imaginary inclined plane located fifty feet above the established elevation of the airport at the nearest airport boundary line and increasing to a height of one hundred feet above the established elevation of the airport at a distance of two miles from the nearest airport boundary line. Beyond this two mile limit the Civil Aeronautics Administration specifications shall apply.

APPROVED _____ (signed) _____ SUBMITTED _____ (signed) _____

H. J. NORTON, Chairman

LESTER J. MAITLAND, Director

MICHIGAN AERONAUTICS COMMISSION

MICHIGAN DEPARTMENT OF AERONAUTICS