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THE MICHIGAN PROGRAM OF AERONAUTICAL REGULATION AND PROMOTION*

FLOYD E. EVANS†

I. INTRODUCTION.

The Need for State Regulation:

The thought of the Michigan State Legislature when drawing up the original air laws and establishing the State Board of Aeronautics was that such laws and such Commission was a necessity from the standpoint of law enforcement and physical and financial protection of the public. There had occurred in the State of Michigan a number of airplane accidents prior to 1929—many of which could be attributed to the use of inadequate landing fields by the so called "barnstormer," who carried passengers at fairs, picnics, and home-coming celebrations.

There existed in the State a number of so called "Aviation Schools" where flying instruction of a sort was given. Many of these schools were poorly organized and inadequately equipped. Many thousands of dollars were solicited from enthusiastic youths throughout the State by this promotional type of school. Upon investigation, in many cases, it was learned by the student—after a substantial deposit had been made—that the school was not equipped to conduct satisfactory flight instruction. This fact was brought to the attention of the State legislature and it was deemed advisable to draw up such laws and regulations as were necessary in order to prevent the public from investing money in flying activities which were of no value.

The need for enforcement of the Air Traffic Laws of the U. S. Bureau of Air Commerce was apparent; consequently these laws were adopted verbatim by the Michigan legislature and the law enforcement officers of the State and the personnel of the Board of Aeronautics were empowered and directed to enforce them.

*This is the second of a series of articles dealing with the state promotion and regulation of aeronautics. The first article, written by Elwood B. Cole and entitled "The Illinois Program of Aeronautical Regulation and Promotion," appears in 5 JOURNAL OF AIR LAW 51.
†Director, Department of Aeronautics, State of Michigan, and Vice-President, East Central Region, National Association of State Aviation Officials.
The Need for Airport Construction:

It was also felt by the State legislature that, inasmuch as Michigan is an outstanding tourist and resort state, everything possible should be done to encourage the establishment of landing fields in the northern, wooded portion of our State where natural landing facilities were infrequent, in an effort to encourage the aerial tourist business. Consequently such legislation as necessary to authorize local communities (as well as the State) to participate in the construction of landing facilities was enacted. Further, the Board of Aeronautics was directed to cooperate with communities in the selection and layout of local landing fields.

The Need for Promotional Activities:

Realizing that over 70% of the world's production of motor cars and trucks is manufactured within the boundaries of the State of Michigan, the State legislature felt that every effort should be made by this State to encourage the use of the airplane—particularly with the thought that when this transport medium arrives at the production stage, Michigan will surely manufacture a fair share of the planes—with consequent increased industrial employment.

II. Basic Regulatory Provisions.¹

(A) Act 177 of the Public Act of 1929:

(1) Flexibility—This act created the Board of Aeronautics and prescribed its powers and duties. Quite logically, very broad powers were granted to the Board and minimum statutory provisions included—due to the probability of continual changes in aeronautical regulations resulting from the continual change and improvement in aviation equipment and personnel.

Except for the inclusion in the laws of certain basic requirements, the Board of Aeronautics was authorized to formulate such rules and regulations deemed necessary and advisable for the control of the industry. After five years of experience, this arrangement has proven satisfactory, except that there still is to be settled by our Supreme Court the question whether or not the State legislature can empower a Board or Commission to formulate and enforce regulations. The fact, however, that no case has been

¹. The Air Laws of Michigan and the Michigan Rules and Regulations pertaining to aviation have been published in two separate bulletins and may be had, upon request, from the Director, Department of Aeronautics, Lansing, Michigan. Lack of space prevented their inclusion in the appendices to this article. [Ed.]
appealed to a higher court is rather conclusive proof that we can continue the enforcement of our regulations without fear of appeal.

(2) Adoption of Federal Standards—Act 63 of the Public Acts of 1931 requires all persons who pilot aircraft in the State of Michigan to possess a U. S. Department of Commerce pilot license and prohibits such person from piloting aircraft except in accordance with the provisions of such federal license.

This act also prescribes that all aircraft engaged in commercial operation within the State must have an appropriate and effective license as issued by the U. S. Department of Commerce.

The basic act referred to in paragraph (1) directs the Board of Aeronautics to adopt and enforce the provisions of the U. S. Air Commerce Act of 1926. It further authorizes the Board to deviate therefrom or add thereto when deemed necessary for the public safety or the safety of airmen. Under the latter provisions of this act, the Board has ruled that identified (unlicensed) aircraft can be flown solo only; that cockpits, other than the pilot's cockpit, will be covered in open planes; that all seats, other than the pilot's, must be removed in cabin planes; and that all dual controls must be permanently removed.

It will be noted that the use of licensed planes for commercial operation only is a statutory provision and strictly in accordance with the federal requirements for commercial aircraft operating interstate. The provision that anyone piloting identified aircraft must have a federal license carries the federal requirements a step farther. Student permits are not considered licenses; consequently anyone piloting an identified aircraft in Michigan must possess at least an amateur pilot's license.

We feel that the limitations specified by regulation relative to the use of identified planes is very logical. It is the first step toward the complete elimination of this type of aircraft. It still allows anyone, other than a student pilot, to build up flying time in order to qualify for a higher license and it goes a long way toward encouraging ownership of licensed aircraft.

(3) Board Organization and Personnel—The basic act provides for the appointment of five members by the Governor for a period of four years. (The terms of the members first appointed were staggered.) Further, the State Highway Commissioner and the Commissioner of Public Safety are ex-officio members of the Board. 'No requirements as to qualifications of the members are specified. All members serve without pay. Geographical representation is not specified by law but has been adhered to in the past.
The Board is authorized to employ such assistants, clerks and other help as required to carry out the provisions of the act creating it.

(4) **Duties of the Board**—The general duties of the Board as prescribed by law are as follows:

(a) Supervision and control over all airports and landing fields used for commercial purposes;
(b) Control of all schools of aviation, aviation instructors, flying clubs and airport managers;
(c) Assistance in the development of air commerce and collection and dissemination of information;
(d) Establishment of civil airways;
(e) Publication of maps;
(f) Establishment of air navigation facilities;
(g) Encouragement of the establishment of airports and landing fields;
(h) Development of aviation weather reporting services;
(i) Enforcement of the provisions of the U. S. Air Commerce Act of 1926.

(5) **State Licenses for Airports, Landing Fields, and Aviation Schools**—Regulations have been formulated and published governing the licensing of commercial fields and of aviation schools and instructors.

The definitions included in the regulations are in strict conformity with those of the Bureau of Air Commerce, the American Bar Association, and other recognized authorities. The basic requirements for licensing have been kept to the minimum consistent with the public safety. License fees are nominal and no renewal fee is required. The airport manager is considered the key contact man of the Board and very specific duties are prescribed for him. The uniform airport field rules, as recommended by the Bureau of Air Commerce, are incorporated in the regulations pertaining to the licensing of airports and landing fields.

(6) **Accident Investigations**—No requirement for the Board to investigate aircraft accidents is set up by statute. However, under the authority to formulate and enforce such rules and regulations as are deemed advisable for the inspection of aircraft, the Board has made it a policy to get a full report of all accidents requiring major repairs to the aircraft or resulting in serious or fatal injury to passengers or the public. When possible, an employee of the Board makes a personal investigation; otherwise reports are secured from the Bureau of Air Commerce inspector, the local airport manager, or from a State Police officer. Regulations require each airport manager report all accidents to aircraft or pas-
sengers that occur within a radius of five miles of their airport or that occur to any aircraft normally housed at or operated from, his field.

(7) Enforcement—The members of the Board and all employees are directed by law to enforce the air laws and regulations. Likewise the State Police officers and local law enforcement officers are empowered to enforce these laws and regulations. Airport managers are also required to aid in their enforcement.

(8) Registration of Aircraft—Act 63 of the Public Acts of 1931 requires all aircraft operating within the State to be registered with the Secretary of State and to pay a registration fee at the rate of $0.25 per pound of net empty weight of the aircraft. This registration fee is in lieu of all property taxes. Provisions are made for special registration certificates for aircraft in transit and for the exemption of aircraft registered in other States.

(9) Miscellaneous—Provision is made in the basic law for appeals by persons refused licenses of any type. The appeal board consists of the Governor, the State Highway Commissioner, and the Attorney General. The penalty clause provides for a fine of not more than $100.00 or imprisonment for ninety days, or both, for violation of any rule or regulation adopted by the Board.

There is no provision in the Michigan statutes for the issuing of certificates of convenience and necessity to air transport operators.

B. Regulations Promulgated Under Act:

(1) Regulations—The State Rules and Regulations pertaining to aeronautics have been published in pamphlet form for free distribution. These regulations are divided into three general subdivisions: (a) "Aviation Schools, Aviation Instructors and Flying Clubs," (b) "Airports, Landing Fields and Airport Managers" and (c) "Inspection of Aircraft and Parachutes and Air Traffic Rules of Michigan."

(2) Airports, Landing Fields and Airport Managers—Minimum size and equipment requirements are set up for airports and landing fields. Provision is made for the issuance of temporary licenses to "barnstorming fields" which are suitable for use by the particular aircraft desiring to use the field.

Airport managers are licensed and are required to perform certain functions in connection with the enforcement of the federal and State regulations.
(3) Aviation Schools, Instructors, and Flying Clubs—Minimum curriculum and equipment requirements are specified for aviation schools of the several classes. Instructors must possess a Department of Commerce transport pilot's license before being eligible for a State instructor's license. A flight and written test is given to all applicants for licenses.

Flying Clubs are licensed as a matter of record and satisfactory proof must be given to show that the club is operating not for profit. Licensed aircraft must be used and club instructors must possess a State instructor's license.

(4) Air Traffic Rules—The Air Traffic Rules of the Bureau of Air Commerce are incorporated verbatim in the Michigan regulations and are enforced by the Board personnel, airport managers and law officers.

(5) Waivers—The Board of Aeronautics may waive any of the requirements of the regulations pertaining to the licensing of airports, landing fields, instructors, airport managers, flying clubs and schools. No provision is allowed for waivers of Air Traffic Rules.

III. The Commission Organization.

(A) Organization and Procedure:

(1) Personnel and Distribution of Duties—No effort has been made to divide the State into districts nor are the individual Board members required to administer regulations and supervise instruction in their particular district. When any matter comes up of importance the Board members in the area are consulted for advice. The Board members are all active business men of outstanding importance in their communities and it is felt that if they were called upon as often as necessary to attend to the Board affairs in their area, they would find it impossible to serve as members. All members serve without pay.

(2) Division of Duties—The Director of the Department of Aeronautics (operating under the Board) coordinates all activities and handles almost entirely the airport and landing field construction work and the aviation educational program.

The Assistant Director handles almost entirely the licensing and law enforcing work, town marking program, weather reporting service problems and air tours and shows. In addition the Assistant Director aids in the airport construction program.
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(B) Director's Office:

(1) Personnel—The Director of the Department, Assistant Director, and chief clerk comprise the entire office personnel. During recent federal work programs, one draftsman and two clerks have been assigned to the Department to assist in the extra work. Five airport engineers were assigned to the Department during the C. W. A. program by the Bureau of Air Commerce.

(2) Equipment—(a) Office—A cross-index filing system using the subject matter and the name of the correspondent has been established for the office correspondence files. A card system with a file reference is used for filing all license applications. A complete file of all county maps and State Conservation charts—showing State owned properties—is contained in one vertical steel file. In this file is also a folder for every town and city in the State with a population over 500. A cross-reference memorandum is placed in each city folder where an airport has been developed or is under construction.

One steel file contains a complete record of all work-projects financed entirely by the State or developed with Civilian Conservation Corps labor.

One steel file contains all C. W. A. and F. E. R. A. work projects, also all F. E. R. A. Aviation Ground School projects.

The office is provided with two four-section book cases which contain the recent state statutes, Bureau of Air Commerce bulletins, aviation texts and aerial photographs. Other office equipment consists of four desks, magazine file, blue print file and drafting table.

One large closet (8 ft. by 5 ft.) with shelves on three sides, contains all the application blanks, stationery, license forms, regulations, and obsolete files.

The office of the Board (and Department) is now located in a downtown office building. An Administration Building is under construction at the Capital City Airport for the sole use of the Board and probably will be occupied during the summer.

(b) Field—The field equipment now owned by the Board of Aeronautics consists of two trucks, one tractor, one grader, one two-bottom plow, one three-section disc and one airport float. This equipment is now in use on the Capital City State owned airport at Lansing but will be used in the future at other locations where construction work is in progress. Fifteen heavy-duty obsolete army trucks are being turned over to the Board by the F. E. R. A. for
use on airport construction work where there is short heavy hauling to be done.

(c) Blank Forms—Application blanks are provided for all types of licenses, also field inspection forms and flight test record sheets.

(d) The Aeronautical Chamber of Commerce aircraft and licensed pilot lists are kept on file and found to be very valuable. No other record of pilots and planes is available. The State law requiring all aircraft to be registered has not been enforced to date; consequently no State record of planes is available. The library also contains Bureau of Air Commerce bulletins, books on air law, State statutes and aviation texts. Current aviation magazines, airport directories, official aviation guide and tourist information are carried on the library magazine rack.

(C) Commission Budget and Finance:

(1) Amount and Source of Funds—The entire financial support of the Board of Aeronautics is derived from the aviation industry. We feel that the State is not entirely fair in this matter but to date have been unable to get any appropriation to supplement the aviation revenue. The assistance and cooperation, however, secured from other State Departments as hereinafter explained actually amounts to a considerable sum, probably more than could be expected from a cash appropriation.

By far the largest proportion of the revenue into the Special State Aeronautics Fund is from the aviation gasoline tax. The income from licenses of the several types is negligible and the income from the aircraft weight tax (registration fee) has been negligible to date. This latter tax, however, is a very fair tax inasmuch as it is in lieu of a property tax and no doubt the revenue will some day be a rather sizeable item.

Following is the annual income to date from the aviation gasoline tax:

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1929-1930</td>
<td>$41,078.55</td>
</tr>
<tr>
<td>1930-1931</td>
<td>34,636.48</td>
</tr>
<tr>
<td>1931-1932</td>
<td>34,071.82</td>
</tr>
<tr>
<td>1932-1933</td>
<td>25,520.78</td>
</tr>
<tr>
<td>1933-1934</td>
<td>18,234.24</td>
</tr>
</tbody>
</table>

The State legislature budgets the aeronautics funds and the Board must keep within this budget and likewise must keep within the aviation revenue.
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(2) **Budget**—Following is the budget covering the past three years and the anticipated budget allowance for the coming year:

<table>
<thead>
<tr>
<th></th>
<th>1931-1932</th>
<th>1932-1933</th>
<th>1933-1934</th>
<th>1934-1935</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Service</td>
<td>$11,526.00</td>
<td>$8,763.00</td>
<td>$8,650.00</td>
<td>$9,000.00</td>
</tr>
<tr>
<td>Supplies, Materials</td>
<td>9,586.00</td>
<td>9,562.00</td>
<td>7,244.00</td>
<td>8,710.00</td>
</tr>
<tr>
<td>Contractual Service</td>
<td>5,456.00</td>
<td>1,080.00</td>
<td>2,928.00</td>
<td>400.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$26,568.00</strong></td>
<td><strong>$19,405.00</strong></td>
<td><strong>$18,822.00</strong></td>
<td><strong>$18,110.00</strong></td>
</tr>
</tbody>
</table>

Following is a breakdown of the operating expenses of the Board for the year 1933-1934:

- **Personal Service**
  - Director of the Department: $3,600.00
  - Ass't. Director: 3,100.00
  - Chief Clerk: 1,350.00
  - Ass't. Clerk and Extra Help: 600.00
  - Supplies: 2,300.66
  - Materials: 30.00
  - Contractual Service: 4,914.19
  - Replacement of Equipment: None
  - Additional Equipment: 2,927.15

**Total** $18,822.00

(3) **State Aircraft Expense**—The Aeronautics Department has owned and operated an airplane since 1931. It has been the policy to obtain a new and up to date plane every two years. Feeling that it is of value to the aviation industry for a State department to be constantly demonstrating the very latest equipment, Stinson four-place cabin planes—Michigan products—have been used at all times.

Such a plane is invaluable for survey work of new airport sites, as well as for transportation. Much time is saved by our limited personnel on inspection trips and we have found that this type of transportation is as economical as an automobile when the savings in hotel bills, meals, etc., are taken into account.

The plane is used liberally in taking State, county and city officials for short flights and has been used considerably by State officials of other departments in the conduct of their business. A charge for actual operating costs is made to other State departments when special trips are made for them.

The plane has been used in the past on many occasions for forest fire patrol service in emergency cases.

Following is a tabulation of the costs of operation of the
State owned airplanes over a four year period and approximately 1600 hours of flying:

- Net Cost of Planes: $5,563.01
- Insurance: 1,774.87
- Accessories: 179.54
- Repairs: 409.14
- Miscellaneous Labor: 59.07
- Storage: 2,092.64
- Gasoline and Oil: 5,726.68
- Overhauls: 593.85
- Mechanic's Service: 778.22
- Miscellaneous: 531.31

Total: $17,708.33

(Net cost per hour $11.00 or approximately 11c per mile.)

(D) Cooperation with Other Organizations:

1. Attorney General's Department—The State Attorney General is the legal advisor and counsel for the Aeronautics Department. All matters of law are referred to him for opinions.

2. State Highway Department—The utmost of cooperation has been received from the State Highway Department at all times. This cooperation has been so splendid that many people believe that the Aeronautics Department is a part of the State Highway organization. Highway engineers and equipment have always been placed at the disposal of the Aeronautics Department.

   This cooperation is vitally necessary if an airport construction program is undertaken.

3. Department of Conservation—Inasmuch as many of Michigan's landing fields are being constructed in wooded areas or resort communities, the State Conservation Department is doubly interested in the Aeronautics program. Fields in the wooded areas are of value for forest patrol service and fields at resort communities will add to Michigan's tourist business. The personnel and equipment of the Conservation Department have always been liberally placed at the disposal of the Aeronautics Department. Fire patrol personnel are often used during off-fire seasons in aiding in landing field construction, and State owned lands under the control of the Conservation Department have always been made available for use for landing field sites. Nearly two and a half million acres of land in Northern Michigan is under State control.

4. State Police—The Michigan State Police cooperate in many ways with the Aeronautics Department. They report and
investigate aircraft accidents, provide ground transportation for aviation inspectors, and are on the alert at all times for air traffic violations. Aviation instruction is given to the State Police annually at their Police school.

(5) Federal Emergency Relief Administration—This organization has been by far the greatest aid to the Aeronautics Department. The State Aeronautics Director was appointed the Airport Advisor of the State at the start of the C. W. A. program and has continued in that capacity through the F. E. R. A. program. Every possible cooperation has been given to the Aeronautics Department by the State Relief Administrator. Four airport engineers, one clerk and one draftsman were assigned to the department by the Relief Administration during the C. W. A. program. One draftsman and two clerks have been carried during the F. E. R. A. program. During these programs 67 airport projects have been approved for construction involving an expenditure of over two million dollars. Of these projects, 33 were entirely new projects; the remainder were improvement of existing airports. The work accomplished under these relief programs has advanced Michigan’s construction program at least 10 years.

(6) Civilian Conservation Corps—The first real impetus to Michigan’s airport construction program came with the establishment of the C. C. C. camps in Northern Michigan in 1932. During the past three years 24 fields have been partially or completely developed with C. C. C. labor and equipment. Sixteen additional projects have been approved for construction during the current enlistment period. Too much cannot be said of the splendid work accomplished with this class of labor. Camp commanders state that their personnel are far more interested in airport construction work than most other types of projects as they all look forward to seeing the first plane to land on their completed project.

(7) U. S. Bureau of Air Commerce—The assistance and cooperation of this Bureau is very necessary for the successful operation of any State Aeronautical department. Michigan has enjoyed most valuable assistance from the Federal Bureau—from their field inspectors up to the national director.

IV. REGISTRATION AND LICENSING DUTIES.

(A) Aircraft Registration:

The State law requires all aircraft to be registered with the Secretary of State. As previously stated, this law has not been
enforced to date. Application forms and transfer certificates are provided by the Secretary of State.

This law will no doubt be enforced in the near future. The provision that the registration fee (½c per pound of net empty weight) is in lieu of personal property taxes favors the aircraft owner very materially if he is now paying the property tax. The fact that tax assessors have not been assessing aircraft in most localities makes the registration fee appear as an additional burden at this time.

(B) Registration of Pilots:

Pilots are not required to register for any purpose in the State of Michigan. There appears to be no reason for requiring such registration as the records of the Bureau of Air Commerce are always available.

(C) Airport and Airport Manager's Licenses:

The requirement that all airports and landing fields used for commercial purposes be licensed accomplishes two very important things. First, this requirement fairly well assures the public that safe conditions exist for aircraft operation. Secondly, this requirement definitely puts into the hands of the Aeronautics Department complete information of all landing facilities. This information is vitally necessary in the publication of airway maps and individual field drawings. Periodic inspections are made of all licensed fields and field condition bulletins issued to all airport managers.

Advice is given to airport managers for further improving their facilities. Special attention is paid to the removal of hazards and the proper marking of fields with conventional circles and boundary markers. Wind direction indicators are provided by the Aeronautics Department to all fields periodically.

The airport manager is the key contact man of the Aeronautics Department at all communities. He is responsible for the enforcement of the federal and State air laws. He is required to report all accidents in the vicinity of his airport, render reports on field conditions and has many other duties. At the present time there are 113 licensed airports and airport managers. At least twenty more will be added with the completion of additional fields now under construction. Blank forms are provided by the Aeronautics Department for applications for approval of airports, landing fields, temporary landing fields and airport managers. Inspec-
tion forms are issued so that a permanent record of the field conditions is on file in the office. Locations where fields have been approved are reminded from time to time of the advisability of establishing a permanent field. Many permanent fields have resulted from these contacts.

(D) Flying School and Instructor's Licenses:

The licensing of schools of aviation and instructors has resulted in entirely eliminating from Michigan the so called “gyp” school whose sole purpose was to sell aviation courses for profit to itself only. Many formerly advertised aviation schools existed in name only. They possessed neither proper training equipment nor qualified instructors. After collecting many thousands of dollars from unsuspecting but well-meaning aviation enthusiasts these operators would move on to another city and start operation under another name. Now all Better Business Bureaus, Chambers of Commerce, etc., know of the licensing requirements of flying schools and report to the State Aeronautics Department any new operator attempting to solicit funds for enrollment in flying schools.

The licensing requirement of flight instructors has had, it is believed, a material effect in raising the standard of the flight instruction in the State. They all know that they must pass another test very similar to the Bureau of Air Commerce transport pilot test and, in addition, must pass a written test. This latter test, if passed by the applicant, is fair proof that he is qualified professionally and educationally to pass the necessary flying knowledge on to the students he professes to be training.

These licensing requirements of schools and instructors provide a very splendid office record that is very valuable in advising prospective flight students of the existence of qualified schools or instructors in their locality.

(E) Flying Club Licenses:

Many so-called flying clubs came into existence when the licensing requirement of aviation schools became effective. Many of these clubs were actually devices to avoid the licensing requirement and carry on with promotional instruction activities. Consequently the State regulations were revised to require clubs to be licensed and to show proof that they were not operating for profit and that licensed equipment and instructors were employed. Further the books of all clubs are subject to inspection at any time.
Flying schools and clubs are inspected periodically to see that the standard required by their license is maintained.

The license fees for all classes of licenses are very nominal. There is no annual renewal fee. Following are the license rates now in effect:

- Aviation Schools: $10.00
- Aviation Instructors: $3.00
- Flying Clubs: $3.00
- Airports and Landing Fields: $2.00
- Airport Managers: $1.00

(F) **Airway Beacons:**

No license fee is required for airway beacons. These navigation facilities are encouraged and whenever possible financial aid is given for their construction and operation.

V. **The Supervision of Aeronautical Activities.**

(A) **Control of Flying Activities:**

(1) **Enforcement of Licensing Requirements**—Without the cooperation of airport managers and State Police officers, State aviation regulations may just as well not be written. Unlimited and unwarranted personnel would be required to enforce desired and necessary regulations by the Aeronautics Department alone. Until these regulations are such that they meet nearly the full desires of operators and airport managers they are useless. When they do meet these desires, full cooperation can be expected. Frequent personal contacts with these operators and managers are necessary in order to secure and maintain maximum results.

It has been the policy of the Aeronautics Department to assess a minimum of fines. In nearly all cases convictions have resulted in suspended sentences and temporary groundings. One extreme violation, however, resulted in three years in the State prison. This violation consisted of a flight by an unlicensed and intoxicated individual who appropriated another airplane and performed acrobatic feats far below the legal altitude. The pilot was without a parachute, and ended his flight by driving several motorists into a ditch and finally arriving upside down on the airport in a plane demolished beyond repair. We believe three years was hardly enough.

(2) **Control of Barnstorming Flights**—During the early period of the licensing requirement of all commercial landing fields
there were flagrant violations. Some convictions were secured and a number of the most persistent barnstormers decided to abide by the requirements. After that these barnstormers acted as special self-appointed inspectors for they would not stand for someone else barnstorming off an unauthorized area as long as they themselves were abiding by the law. Here again State Police officers aid materially in enforcement as they make it a point to check up on any temporary operation and stop same if not authorized.

The licensing of these temporary barnstorming fields is a benefit in reducing activity on unsafe fields and gives many leads to the Aeronautics Department for the establishment of permanent fields. Further, the record of these fields in the office has been valuable in advising pilots as to the safest area on which to land in case of emergency flights.

(B) Control of Airport Operation:

(1) Enforcement of License Requirements—The airport managers are looked to for the enforcement of licensing requirements on their respective airports; periodic visits by State personnel are reminders to the managers of their responsibilities—all of which are specifically noted in the State Regulations.

(2) Airport Field Rules—The recommended Uniform Airport Field Rules of the Bureau of Air Commerce are incorporated verbatim in the State regulations. It is the responsibility of the airport manager to enforce these rules.

(C) Control of Air Instructors:

Periodic, but all too infrequent inspection is made of instructional facilities and activities. Here again the airport manager is required to see that operation is conducted according to regulations.

(D) Control of Air Navigation Facilities:

No difficulty has been encountered in connection with the erection of false aids to navigation. The appearance of such false aids that were deemed dangerous would be reported to the Bureau of Air Commerce.

(E) Accident Investigation:

Upon receipt of a report of an accident, the Aeronautics Department determines from the local airport manager if all facts have been secured. If possible to investigate, a representative of
the Aeronautics Department visits the scene of the accident and gets all the data from the local airport manager. In many cases State Police officers cover the entire accident and report their findings. The Bureau of Air Commerce Inspectors and the State Aeronautics Inspector reciprocate in the exchange of accident information.

Accidents that do not result in the serious injury to persons or property are not investigated unless there has probably been an air traffic violation.

All accident reports are drawn up on blank forms provided for this purpose.

VI. The Promotion of Aeronautics.

(A) Construction:

(1) Airports and Landing Fields—The main construction work done by the Board is, of course, the development of landing fields and the improvement of existing fields. Prior to the Civil Works Administration work program in December, 1933, the department had conducted an extensive landing field construction program for over two years. During this period 47 fields had been established—mainly in the northern portion of the State. Also many of our existing airports have been materially improved by the removal of hazards, smoothing up of landing areas and the proper marking of same.

With the advent of the C. W. A. programs in December of 1933 a very extensive airport work program was undertaken. During the C. W. A. program and the subsequent Federal Emergency Relief Administration program nearly $2,000,000.00 has been expended on airport construction work in the State of Michigan. This work covers the construction of thirty-four new fields and the improvement of thirty-one fields. During the peak of the relief program nearly five thousand men were employed on airport work throughout the State.

Much of the work that had been accomplished prior to the advent of the C. W. A. program was due to the very splendid cooperation received from other state and county departments. The State Conservation Department has been and is still very enthusiastic for the establishment of landing facilities in the wooded areas; it being thought that these fields will be of material value during forest fire periods. Fourteen fields were developed by C. C. C. camp labor in the northern part of the State during the years 1932
and 1933. This work on airports by C. C. C. camps, likewise the work of development under the F. E. R. A. work program has continued, and at the present time there are sixty-five projects under construction in the State. Fourteen fields have been approved for construction or for improvement under the C. C. C. camp program during the 5th enrollment period starting April 15th of this year.

The State Highway Department and County Road Commissions have likewise cooperated to the fullest extent by the liberal loan of equipment and competent engineers.

(2) Air Marking—Prior to the C. W. A. program an extensive town air marking program was inaugurated by the State Department of Aeronautics. Approximately one hundred and fifty towns were air marked through the activity of the Board.
Paint was furnished to all communities without cost provided there was a guarantee that the marker would be installed where and as directed. During the C. W. A. and F. E. R. A. programs approximately three hundred additional towns have been air marked. It is proposed to continue this work under the new work program with the ultimate aim of getting all towns properly air marked.

Special attention has been paid to the proper marking of all airports and landing fields. Permanent field circles are provided—also suitable flush type or panel type boundary markers installed. A wind sock is furnished to all airports and landing fields from State Aeronautics funds. Future plans call for the construction of permanent white concrete field circles and metal type cone boundary markers on all permanent fields.

Air marking of highways has been experimented with but has proven unsatisfactory. These markings are not only hard to locate but are very expensive to maintain.

(3) Airway Beacon Operation—The State Aeronautics Department has erected and is now operating and maintaining fourteen airway beacons along the several intrastate airways in the State. The beacons proper in all cases are property of the Federal Bureau of Air Commerce. The towers in most cases have been purchased outright by the State Board of Aeronautics. In some cases, however, Department of Commerce towers are also in use. The one airway between Detroit and Lansing, Grand Rapids and Muskegon is now fully equipped with night lighting facilities with beacons at approximately fifteen mile intervals. The direct route to Chicago from Detroit is being lighted as rapidly as funds will permit.

(4) Weather Reporting Stations—A number of State Aviation Weather Reporting Stations have been established. At these stations the airport manager is in all cases the appointed observer who serves without pay to the Department. Weather instruments consisting of ceiling balloons, hydrogen equipment, thermometers, barometer and wind direction indicator and manometer were installed at the several locations. Reports from these stations are made available to transport operators without charge, the State Department of Aeronautics paying for all messages. Additional weather observation stations as well as radio broadcasting stations are contemplated to be established in the future.

(B) State Airway Maps:
The first official Michigan airway map was published in 1933.
by the Michigan Public Utilities Commission under the supervision of the State Aeronautics Department. This map was a combination railroad and airway map. This is now rather obsolete and it is the intention to bring the map up to date during the present year.

Through the cooperation of the Michigan State Highway Department all airports and landing fields are shown on all issues of the State Highway map. These maps are revised and re-issued twice a year so the Michigan landing facilities are kept up to date on this map. It is recommended that all State Highway maps carry the airports in conventional symbols. Their presence on these maps not only serves the airmen in locating fields but their existence is called to the attention of the motorist, who seeing more landing facilities on the road maps will turn more frequently to the use of the airplane for transportation.

(C) Airport Aids:

(1) Use of Road Equipment—The State Highway Commissioner is directed by law to cooperate with the Aeronautics Department and render all aid and assistance possible in their work. Further, a recent law authorizes the State Highway Commissioner to close roads in the vicinity of airports for a temporary period upon recommendation of the Board of Aeronautics. This latter provision, we believe, is going to make it possible to conduct air shows, dedications, etc., at a profit and help materially in reducing the cost of airport operation to communities.

(2) Airport Directory—Periodic lists of all airports and airport managers are published by the Aeronautics Board. Bulletins are also issued frequently noting the condition of all landing facilities.

Drawings in detail of all airports and landing fields are now being prepared and will be issued without cost to all airplane owners. These drawings will be found in a booklet 5½ inches by 8½ inches. Changes in the fields have been so frequent during recent years—due to new construction—that it has been felt desirable to delay the publication of these drawings.

(D) Weather Reporting Service:

Starting in 1933, weather observers were appointed at four key points along our intrastate airway where federal observers were not located. One of these stations was at the General Motors proving ground where every modern weather instrument and a
trained observer were available. Reports were made available to the transport operators upon call. The cost of the telephone calls was paid for by the Aeronautics Department. Hydrogen balloon equipment, thermometer, barometer and anemometer were provided at the other three stations established and the local airport manager trained in observation by the federal observers. Reports were rendered to airline operators by telephone at the expense of the Aeronautics Department. Recently two of these stations have been taken over by the Federal Bureau.

(E) Educational Program:

(1) Aviation Talks—The personnel of the Aeronautics Board has been called on very frequently for luncheon club and radio talks on aviation. Every opportunity is taken to secure such engagements.

(2) Aviation Texts—In 1932, the Board began working with the Aviation Division of the Michigan Industrial Educational Society in an effort to get more and more aviation subjects taught in the public schools. In cooperation with this society the Aeronautic Board has published two booklets which have had nationwide circulation. The one book “Aviation Instruction in Public Schools” covers the subject very thoroughly and points out in detail just how aviation subjects can be worked into our present school curriculum without adding cost to the school for equipment or personnel. Specific examples are given for inclusion in mathematics courses, a selected list of books for outside reading in English courses is given, and geography and social science courses are made more interesting by the inclusion of aviation subjects.

The second booklet is a “Text on Model Plane Building.” This text is sufficiently complete so that a manual training instructor can use it without difficulty in organizing and conducting successful model plane activity.

The Board again in cooperation with the Industrial Educational Society appealed to the editor of the physics book in most universal use in Michigan schools to bring his chapter on Aerodynamics up to date. The result was that we were authorized to rewrite the entire chapter. This has been done and a revision of the physics book has been published and is now in use in nearly all Michigan schools with a modern digest of Aerodynamics and theory of flight included.

(3) Model Plane Activity—Coincident with the publication of the model plane texts, the Aeronautics Board encouraged the
THE MICHIGAN PROGRAM

conduct of model plane contests in all larger communities and conducted the "State Annual Model Plane Contest" during the years of 1933 and 1934 in cooperation with the American Legion. It was found impossible to give the time required for this contest this year and it was turned over to the Junior Birdmen of America organization. The contest is now an established annual affair and will be carried on either by the Junior Birdmen or such other organization as designated by the Aeronautics Board.

(4) Aviation Ground Schools—By far the most interesting and productive educational activity of the Aeronautics Board has been the conduct during recent months of aviation ground schools under the Federal Emergency Relief Administration's Education Program.

Under this program, ground schools were established in over 40 cities in the state with an enrollment in excess of 1900 adult students. Over 1200 texts were purchased by students attending these classes. Over 1100 have now graduated from the primary course and nearly all of these graduates are now taking the advanced course in meteorology and navigation. Over 130 of these graduates are now actually taking flight instruction with a prospect of 200 additional flight students out of this group during the summer. As a result, some 50 planes will be purchased, according to most recent reports from the instructors.

Plans are being formulated to conduct these F. E. R. A. classes during the coming winter on even a larger scale than in the past. A national educational program including the ground school work will do more to make the nation air minded than any other single thing that could be done.

A general description of this ground school course is as follows:

(a) Purpose—The intent of these aviation ground schools is to provide adults, over high school age, with a free course of instruction in aviation subjects.

Many young business and professional men have been eager for some time to become better acquainted with aviation. The cost of a course of instruction, the unavailability of such courses in most communities and the time required to pursue such a course has prevented many individuals from more closely associating themselves with the aviation industry.

Millions of dollars have been expended under the several Federal Work Relief Programs during the past year in improving ex-
isting airports and developing new landing fields. Many of these fields are not in use.

Much publicity has gone out in recent years promising the public a cheap, light, safe and economical airplane. The demand apparently is not yet sufficient to warrant the production of such a plane, even though many thousands of individuals have indicated their casual interest in such a plane.

Fifty to one hundred thousand prospective airplane owners can be enrolled in the United States in F. E. R. A. Ground Schools if those now engaged in the aviation industry and school superintendents will cooperate and make available these courses to the business man and executive who is employed at somewhat better than the average wage. These men are all potential plane owners. Their demands will make the inexpensive plane a reality and put the thousands of airports over the country into productive use. Further, the production of these new aircraft will put thousands of trained mechanics and craftsmen that have long been unemployed to work at their trade and open the way for the healthy development of a new transportation industry.

(b) Time, Place and Length of Course—These F. E. R. A. classes are held in the evenings in public school classrooms where there are blackboards, desks, chairs, heat, light and other conveniences that are essential for the conduct of a successful course of instruction.

Classes are held either two or three evenings a week as local conditions warrant. A total of thirty class periods is required to complete the course.

(c) Instructors—Instructors are selected by the local superintendent and approved by the local County Relief Administrator. If the instructor can be classified by the Administrator as a "needy unemployed" he is eligible for compensation for his duties at the rate of $1.00 per hour with $15.00 per week as the maximum. Instructors are paid only for time actually employed during the classroom period.

Graduate aeronautical engineers are selected as instructors whenever possible. Those with practical flying and teaching experience are given preference.

(d) Course and Text—The most modern ground school text available has been selected for use in Michigan by an educational coordinating committee appointed by the Director of Education of the F. E. R. A. (The text, published by the Thompson Aviation Publishers, 221 Melbourne Street, Detroit, Michigan, has been
selected as the most desirable.) Other texts, if preferred by instructors, must be approved by the Director of Education of the F. E. R. A.

All students must provide themselves with the standard text. The cost of the preferred text is $5.00 and must be purchased through the instructor in order to take advantage of the reduced price.

The course consists of instruction in the following subjects:

1—Nomenclature.
2—The Airplane.
   a—Wing Construction.
   b—Control System
   c—Rigging.
   d—Fuel System.
   e—Patching and Repairing.
   f—Materials.
3—Theory of Flight.
4—Aerodynamics.
5—Stability.
6—Aircraft Engines.
   a—Ignition.
   b—Carburetion.
   c—Trouble Shooting.
7—U. S. Department of Commerce Regulations.
8—Air Traffic Rules.
9—State Laws and Regulations.

The work given in this course is such that any student completing the course can pass the written examination required to qualify for any type of pilot's license except the transport license. (The latter license examination includes questions on meteorology and navigation which are not included in this course.)

A detailed outline of the course giving the subject matter to be covered at each class period has been prepared by the State Board of Aeronautics.

Examination questions for all written examinations have also been prepared and must be used in all schools.

(e) Method of Enrollment—Registration blanks have been supplied to all school superintendents by the Michigan Board of Aeronautics. These blanks when filed by applicant permit the instructor to classify his students into groups of approximately the same age and educational qualifications. Sixteen years is the minimum age.

Ten is the minimum class. If more than thirty students are
enrolled it is recommended that the section be divided into two classes.

Students enrolled in public schools or universities are not eligible for enrollment in F. E. R. A. courses.

(5) *Air Tours and Dedications*—The State Department of Aeronautics has in the past years taken a very active part in the promotion and conduct of a State Air Tour. This tour has as one of its objectives the display of the latest type of aircraft to the communities visited and has the advantage also of taking the airmen into the northern resort areas, where we believe they will become interested and return from time to time.

The Board of Aeronautics likewise has taken an active part in the conduct of airport dedications and air shows. It is the thought of the Board that unless such dedications and air shows are properly organized and conducted the good they will do will be of little value.

(6) *News Bulletin*—Periodic news bulletins are issued to all airport managers, aviation schools, daily and weekly newspapers in the state, national aviation magazines, etc. These bulletins contain field condition information, notice of new fields under construction, time of operation of state airway beacons, aviation ground school activity, notice of airport dedications and air shows and general aviation information of interest to the public.
Appendix A

SAMPLE LANDING FIELD LAYOUTS IN MICHIGAN

[Diagram of a sample landing field layout in Michigan]

[Mackinac City landing field layout by Michigan Board of Aeronautics, 1932]
Appendix B

STATE AVIATION PLAN FOR MICHIGAN

MICHIGAN BOARD OF AERONAUTICS
Lansing, Michigan

A. CONSTRUCTION
(1) Airports for
  (a) Airways
  (b) Hunting and Fishing Communities
  (c) Forest Patrol
  (d) All Communities
(2) Navigation Facilities
  (a) Town Marking
  (b) Night Lighting
  (c) Radio Aids
(3) Weather Reporting Service
  (a) Airways
  (b) Police and Conservation Posts
  (c) Miscellaneous

B. LICENSING AND ENFORCEMENT
(1) Airports and Managers
(2) Aviation Schools and Instructors
(3) Air Traffic and Airport Rules

C. PROMOTION
(1) News Releases and Bulletins
(2) Instruction in Public Schools
(3) Model Plane Building
(4) Air Tours and Exhibitions
(5) Publication of Maps
(6) Field Drawings
(7) Aerial Tourists
(8) Encouragement of Airport and Town Marking
(9) Aviation Lectures
(10) Airport Management
(11) Aviation Ground School
Appendix C

APPLICATION FORMS FOR VARIOUS LICENSES*

(1) Airport Approval

STATE OF MICHIGAN

MICHIGAN BOARD OF AERONAUTICS

Lansing, Michigan

APPLICATION FOR AIRPORT APPROVAL

Date..........................

Name of Field..............................................................

Owner.................................................................
Manager..............................................................

Location:

Distance, Direction from city..........................................
Highway to Location..................................................

Description:

Size (in feet) East and West........................
Shape............................................................... Surface
Landing strips or runways........................

Obstructions: (Describe fully)

Marking and Identification:

Name of Hangar of Airport Buildings...........................
Field Circle (Standard Size, 100 feet diameter, 4 ft. band)

Lighting:

Beacon.................................................... Boundary Lights
Flood Lights.................................................... Approach Lights

Accommodations:

Personnel for Servicing........................
Storage Rates...........................................
Licensed Mechanics Available........................

Hangars & Size:

Specification-Fuel & Oil........................
Price per gal. Gas...................................
Oil.................................................................

Fire Equipment........................................
Transportation to City........................

Communication Equipment:

Telephone............................
Telegraph........................................
Radio............................................................

Meteorological Data:

Weather Map & Display Board

Nearest Weather Observer...

Remarks:

Town Marking (Where Located)
Other Information

Make sketch of field on reverse side showing dimensions, obstructions and show surrounding fields.

Signature
Capacity
Address

APPLICATION MUST BE ACCOMPANIED BY CERTIFIED CHECK OR MONEY ORDER IN THE AMOUNT OF $2.00.

*Except in one instance, for purposes of illustration, the affidavit provisions have been omitted from these forms.
THE MICHIGAN PROGRAM

(2) Temporary Field License

MICHIGAN BOARD OF AERONAUTICS
Lansing, Michigan

APPLICATION FOR TEMPORARY FIELD LICENSE

Name of City or Village...........................................................
Distance and Direction from City..............................................
Name or Number of Highway....................................................
Name of Owner or Lessee of Field...........................................
Address ...........................................................
Description: (Size in Feet) E. & W. N. & S. Shape...................
Surface
Obstructions: (Describe Fully)..............................................
Dates you wish to use Field.................................................
Remarks and Other Information.............................................

Signature .................................... Address ..................................

INSTRUCTIONS FOR FILLING OUT APPLICATION:
1. Make sketch on reverse side showing: Dimensions in feet; obstructions on and bordering the field; distances and direction to town; roads or highway leading to the field, and any other information that will assist in locating the field from the air or the ground.
2. Answer every question fully.
3. Application must be in this office at least three days prior to dates you wish to use the field.
4. Applications must be accompanied by certified check or money order in the amount of $2.00 (NO CASH ACCEPTED).

(3) Airport Manager's Application

NUMBER.................. DATE..........

MICHIGAN BOARD OF AERONAUTICS
Lansing, Michigan

DATE...........................

AIRPORT MANAGER'S APPLICATION

1. Name ........................................................................
2. Address .....................................................................
3. City ........................ License No....................
4. Located at.................................................................
5. Owner or operator......................................................
6. Address ......................................................................

State.......................... County of......................... ss.

AFFIDAVIT

being first duly sworn, upon his oath deposes and says that the foregoing statements are true of his own knowledge.

Signature

Subscribed and sworn to before me this ...... day of ................

My commission expires ...............................................

Notary Public

Send 2 photos showing head and shoulders.

(4) Flight Instructor's Rating

NUMBER.................. DATE..................
FLIGHT INSTRUCTOR'S APPLICATION

Date...........................

1. Name ...................................................
2. Address ..............................................
   City................................................................
3. Are you a Transport Pilot? .........................No. of license ............
4. Is your license effective, revoked or suspended? .............
5. Where do you wish to teach? (Name of school) ..............
6. What airport? .........................................Location ..............
7. Is school licensed? ....................................No. of license ............
8. Is airport licensed? ...................................No. of license ............
9. Have you read the Rules and Regulations of the Michigan Board of
   Aeronautics? .............................................

(5) Approved School Certificate

MICHIGAN BOARD OF AERONAUTICS
Lansing, Michigan

APPLICATION FOR APPROVED SCHOOL CERTIFICATE

Application No ...................
Certificate No ...................
Inspector's Action ..............
Inspector .....................
Date ..............................

To the Board of Aeronautics:
Application is hereby made for an Approved School Certificate as follows:

1. Transport ..........................
2. Limited Commercial ............
3. Private ...........................
4. Ground ...........................

1. Name .......................................................
2. Permanent address ......................................
   Street Postoffice ......................................
3. Who is General Mgr. or Superintendent of School ...........
4. List of Persons financially interested in school (If officers show Titles)
5. Have any of the above persons previously been engaged, interested in
   or employed by anyone engaged in the business of conducting a flying
   or ground school or both? If so where and when? ..............
6. Three references as to ability, integrity, and position of applicant

7. Has any of the persons shown under paragraph No. 5 ever been in-
   volved in litigation relating to operation of an aircraft school. Give
   full details: .............................................
8. Equipment:
   Name and location of Flying Field ...........................
9. Airplanes for Flight Instruction, Types and number of type available
10. Classrooms, Number and size ................................
11. Airplanes available for ground course, types and number of each type
    available ..............................................
12. Engines available for ground course, types and number of each type
    available ..............................................

14. Parachutes, Number and type ..........................................  

Instructors:
15. Number of Flying Instructors. ..........................................
16. Names of Flying Instructors with the transport license number of each ............................................

17. Number of Ground Instructors ........................................
18. Names of all Ground Instructors with the subjects they propose to teach ........................................

Courses:
19. Number of Students enrolled in flying courses ........................................
20. Number of Students enrolled in ground courses ........................................
21. Have you attached a complete outline of your flying courses? ................
22. Have you attached a complete outline of each ground school subject? ........................................

Inspection:
23. When will your school be ready for inspection? .......................
24. If application is for Ground School only, what provision have you made for your students obtaining adequate flying instruction? ................
25. If application is for a Flying School only, what provision have you made for your students obtaining adequate ground instruction? ........

(6) Flying Club Approval

MICHIGAN BOARD OF AERONAUTICS
Lansing, Michigan

APPLICATION FOR FLYING CLUB APPROVAL

Date ........................................

1. Name of Club ........................................................................
2. Address ................................................

3. Name of Airport ....................................................................
4. Name of Manager or person in charge of Club: 

5. List of Club Officers—Showing titles ........................................
6. Airplanes Available for Flight Instruction:

Make. ........................................

Engine ........................................

Dept. No. ........................................

Make. ........................................

Engine ........................................

Dept. No. ........................................

7. Parachutes, number and Type ............................................

8. Flight Instructors:

Name. ........................................

Address ........................................

Name. ........................................

Address ........................................

9. What Provision for Ground Instruction? ............................... 

10. Number of Members in Club taking Flight Training ................

11. Number of Members not in Flight Training ............................

12. What rates do Members pay for Instruction? .........................

13. Do you anticipate selling Instruction to Non-members? .............

Instructions: Fill out on typewriter, answer all questions and attach the following—

Outline of Club flying course
Plan of Club operation
Copy of Membership list
Copy of Membership contract

Application must be accompanied by certified check or money order for $3.00.
Appendix D

APPLICATION FORMS FOR RENEWAL OF VARIOUS LICENSES

(1) Flight Instructor's Certificate

MICHIGAN BOARD OF AERONAUTICS
Lansing, Michigan

APPLICATION FOR RENEWAL OF FLIGHT INSTRUCTOR'S CERTIFICATE

Date..............................
1. Name ........................................
2. Address..................................... City......................................
3. Number of State License Certificate...........................................
4. Where do you wish to teach? (Name of School)..........................
5. What Airport? .................. Location..........................
6. School License Number......................................................
7. Airport License Number..............................................
8. Have you read the Rules and Regulations of the Michigan Board of
Aeronautics? ................................................................
9. If operating independently of any school of aviation, the following ques-
tions will be answered:
(a) Names of persons financially interested in your operation...........
(b) Number of students at time of this renewal application............
(c) Number of students graduated since being licensed as a flight in-
structor, who have secured their U. S. Dept. of Commerce License
........................................................................
(d) Has any of the students you have graduated failed to pass his
U. S. Dept. of Commerce test? Give details:....................
(e) Have you or any of your students had an accident during the past
year which resulted in injury to persons or major damage to air-
craft? Give details..............................................

Instructions:
Applications must be accompanied by photographs in duplicate 1¼" square showing head and shoulders.
All questions must be completely answered.
Applications must be accompanied by a certified check or money order for
$3.00. (No CASH ACCEPTED).
Application must be filled out with ink or on a typewriter.
Please Answer the following:
Age......................
Weight....................
Height....................
Color eyes..............
Color hair.............
Appendix E

INSPECTION FORMS

(1) Landing Fields

MICHIGAN BOARD OF AERONAUTICS
Lansing, Michigan

LANDING FIELD INSPECTION

1. Name of Field ........................................................
2. Location ............................................................... Distance, Direction from City ........................................
3. Owner .................................................................
4. Size .................................................................
6. Surface ............................................................... Rolling? ............................ Level
7. Drainage ............................................................... Good, Fair, Poor
8. Obstructions ..........................................................
Obstacles Lighted? ........................ Wind Direction Indicator
What Kind? ........................... Field Marker
10. Fire Equipment .....................................................
11. First Aid Equipment .............................................
Snow Equipment .....................................................
12. Hangars, No. and Sizes ........................................
13. List of Operators (Schools, etc.) ................................
14. Name of Airport Manager ........................................
Address ................................ Phone ................................
License No. ................................
15. Repair Facilities .................................................. Specification Fuel ....................................................
16. Lighting ..............................................................
17. Accommodations ..................................................
Transportation ....................................................... Weather Information Equipment ..................................
18. Weather Maps and Display Board ................................
19. Observation Equipment ........................................
20. Number of Aviation Gasoline Vendor’s License ................................
Retail ................................ Wholesale ................................
21. Are monthly gasoline reports being rendered? ...........
23. Are Accidents being reported by manager? ................
24. Are air traffic rules being enforced? ......................
25. Are dangerous areas marked? .............................
26. Is name on field or hangar? ...................................
27. Is nearest town air-marked? .................................
28. Remarks (Future development, etc.) .......................

Inspector ............................................................
Date .................................................................

[359]
**Instructor's Flight Test**

**Michigan Board of Aeronautics**
Lansing, Michigan

**Grading**
- 65 or Less, Failure
- 65-70 Poor—Pass L. Gr.
- 70-80 Below Average
- 80-85 Average
- 85-90 Above Average
- 90-100 Exceptional

**Instructor's Flight Test**

<table>
<thead>
<tr>
<th>Recommendation</th>
</tr>
</thead>
</table>

**Name** ........................................... Address ...........................................

**Transport No.** .................. **Total No. of Hours.** .....................

**Place of Test** .................. **Name of School** ............................

**Ship Used.** .......................... **Engine Used** .....................

1. (Solo) 180° Turn for Spot:
   - Takeoff...Climb...Turns...Glide...Landing...Judgment...Grade...

2. (Solo) 360° Turn for Spot:
   - Takeoff...Climb...Turn...Glide...Landing...Judgment...Grade...

3. (Solo) Spins Two Full Turns Each Direction:
   - Left Spin...Start...Recovery...Point...Right...Start...Recovery...Grade...

4. Eights 30° at 800 Ft. Altitude Pylons 1200 Ft.
   - Around Pylons...Skid...Slip...Nose Down...Nose Up...Feel...Grade...

5. Eights 70° at 1000 Ft. Altitude Pylons 1200 Ft.
   - Around Pylons...Skid...Slip...Nose Down...Nose Up...Feel...Grade...

6. Vertical Power Turns. 720° at 1500 feet.
   - Left Turns...Skid...Slip...Cross Controls...Coordinations...Grade...

7. Vertical Power Turns. 720° at 1500 feet.
   - Right Turns...Skid...Slip...Cross Controls...Coordinations...Grade...

8. Maximum Climb and Stall.
   - Wing Drop...Try to Spin?...Feel of Ship...Recovery...Grade...

   - Bank...Glide...Feel...Approach...Judgment...Grade...

10. Check on the Applicants:
    - Ability...Temperament...Patience...Alertness...Reaction...
    - Interpretation of Maneuvers.

*"4 to 9 to Be Flown With Inspector"*

**Remarks:**

**Grade** ...........................................

**Written Exam** .............................................

**Flight Test** .......................... **Grade** ..........................

**Tested By** ..........................

**Date** ..........................

**Did You Fly With This Applicant?** ..........................
### Inspection Report of Aviation Schools, Clubs and Instructors

**MICHIGAN BOARD OF AERONAUTICS**

**Lansing, Michigan**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Name</td>
<td></td>
</tr>
<tr>
<td>2. Location (Field)</td>
<td></td>
</tr>
<tr>
<td>3. License Number, Class</td>
<td></td>
</tr>
<tr>
<td>4. Date of License Expiration</td>
<td></td>
</tr>
<tr>
<td>5. Number and Type of Instruction Airplanes</td>
<td></td>
</tr>
<tr>
<td>6. Is Licensed Mechanic Employed</td>
<td></td>
</tr>
<tr>
<td>7. Number and Type of Parachutes</td>
<td></td>
</tr>
<tr>
<td>8. Are Students Instructed in Stalls and Spins Before Soloing?</td>
<td></td>
</tr>
<tr>
<td>9. Is Student Record Kept?</td>
<td></td>
</tr>
<tr>
<td>10. Number of Students Enrolled: Flight, Ground</td>
<td></td>
</tr>
<tr>
<td>11. Are Students Given Periodic Examinations?</td>
<td></td>
</tr>
<tr>
<td>12. Are Licenses and State Regulations Displayed?</td>
<td></td>
</tr>
<tr>
<td>13. Is Operator Familiar With State Air Laws and Regulations?</td>
<td></td>
</tr>
<tr>
<td>14. Size and Number of Class Rooms</td>
<td></td>
</tr>
<tr>
<td>15. Class Room Equipment</td>
<td></td>
</tr>
<tr>
<td>16. Types of Engines and Planes (Ground Schools)</td>
<td></td>
</tr>
<tr>
<td>17. Are Monthly Student Reports Being Rendered?</td>
<td></td>
</tr>
<tr>
<td>18. (Schools) Name and License Number of Instructors</td>
<td></td>
</tr>
<tr>
<td>19. Advertising Literature</td>
<td></td>
</tr>
<tr>
<td>20. Recommendations of Inspector</td>
<td></td>
</tr>
<tr>
<td>21. Suggestions of Operator of State Regulations and Activities of Air Board</td>
<td></td>
</tr>
<tr>
<td>22. Remarks</td>
<td></td>
</tr>
</tbody>
</table>

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Inspector.
Appendix F

LICENSE FORMS

(1) Landing Field License

STATE OF MICHIGAN
MICHIGAN BOARD OF AERONAUTICS
Lansing, Michigan

LANDING FIELD LICENSE AUTHORIZATION

THIS CERTIFIES, That the Landing Field described herein has been inspected and approved for use for commercial purposes.

Name of Field ............................................................
Location ..................................................................
Owner ...................................................................

Unless sooner suspended or revoked this license becomes invalid not later than.................................................................

W. B. MAYO
CHAIRMAN.

This license is not transferable and is void if altered in any manner. Display prominently at all times.

(2) Flight Instructor's License

STATE OF MICHIGAN
Dept. of Aeronautics

FLIGHT INSTRUCTOR'S IDENTIFICATION

This identification card, issued on the ...................... day of ............................................... 193......, accompanies Flight Instructor's License No. ..........

Age .................. Weight .................................. Color Hair ..................................
Height .................................. Color Eyes ..................................

INSTRUCTOR'S SIGNATURE

STATE OF MICHIGAN
Dept. of Aeronautics

THIS CERTIFIES

That ..................................................

Whose photograph and signature accompany this license is a FLIGHT INSTRUCTOR and is hereby granted permission to instruct student pilots in flying in licensed aircraft within the state of Michigan.

Unless sooner suspended or revoked this license expires ..........................................

CHAIRMAN Bd. of Aeronautics

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Appendix G

AIRCRAFT ACCIDENT FORM

MICHIGAN BOARD OF AERONAUTICS

Lansing, Michigan

AIRCRAFT ACCIDENT REPORT

Location ........................................
Date (of this report) ......................

1. Place, date, and hour of accident ........................................

2. Airplane:
   Mfg. trade name ................. Type Engine ....................
   Mfg. model .......................... Engine No. ....................
   Department of Commerce License, Identification, or Temporary No.
   Was plane being flown without Department of Commerce Numbers?

   Notes ................................................................

   Owner of airplane ..........................................
   Purchased from ..........................................

3. Pilot: Name ............................................ Address ..........
   Age ........ Department of Commerce License No. ............. Class..........
   If pilot has no license, was he operating under letter of authority or
   unlicensed?

4. Passengers: Names ..........................................

5. Result of accident to pilot ..........................................

6. Result of accident to passengers ....................................

7. Result of accident to airplane ......................................

8. Damage to private property or individuals ............................

9. Kind of flying engaged in:
   Carrying passengers ..........................................
   Student instruction ..........................................
   Local flights ............................................... Cross-country
   Regular airways ............................................. Carrying mail

10. Pilot's authority for flight ...........................................

11. Does this accident involve any violation of the Air Commerce Regula-
    tions? ................................................

12. Weather conditions ..............................................
   Visibility .................................................
   Remarks ................................................................

13. Account of accident (include a complete, accurate account of how acci-
    dent occurred, with causes in so far as can be determined)
    Account of accident from witnesses ..................................
    Name ........................................ Address ......

14. Record of pilot: Approximate total flying time as pilot ..........
    Types of aircraft flown .......................................
    Previous accidents .......................................... General ability as a pilot
    Was pilot licensed instructor? ..............................
    Name and License No. of school employed by .............

15. Contributory cause, if any, on account of physical or mental condition
    of pilot ..................................................

16. Technical data: Total flying time since last overhaul of aircraft...
    Type of engine ..........................................
    When was aircraft last thoroughly inspected by operator?
    Was aircraft cared for by licensed mechanic?
    What inspection was made prior to flight, and by whom?
    Was accident due either directly or indirectly to structural failure, or
    defect or improper functioning of the airplane or engine? Explain
    in detail: ..................................................

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Had these defects been brought to the attention of proper authority?...
If so, when and how?..

17. Was accident avoidable or due to the fault or neglect of anyone concerned?

18. Remarks and recommendations by accident investigating inspector:

19. Are questions in report correctly answered? (If not, obtain proper information before submitting report.)

(Signature) ...........................

Accident Investigating Inspector.

20. Remarks and recommendations by operator:

(Signature) ...........................

Operator.

Inclosures:
Photographs of wreck.
Certificates of principal witnesses.

Appendix H

REPORT FORM FOR VIOLATION
STATE DEPARTMENT OF AERONAUTICS
Lansing, Michigan

REPORT OF VIOLATION

Name of pilot..................................................
Address ....................................................... (Street) (Post office) (State)
License number of pilot.....................Class..............
Identification mark or license number of plane............................................
Name of owner..................................................
Address of owner............................................. (Street) (Post office) (State)
Place of violation..........................................
Date of violation............................ Time..............
Sections of regulations violated..................................................
Describe violations in detail:...........................................