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Record of Revision Changes

Number	Date of Revision	Reason for Change	Pages
Original	June 05, 2011	Original certification of entire TCO	1-85
Revision 1	October 01, 2011	Corrections and updates	1,2,7,9,11,14,16,70, 84,,85
Revision 2	February 15, 2012	Entire Manual Update	1-111
Revision 3	October 15, 2012	Merged Ground & Flight TCO's	1-131
Revision 4	April 30, 2013		1-8,10, 12,14,15,16, 24, 44 45,46,49,50,52,53,55 -133
Revision 5	December 01, 2013	Added flight lesson completion record pg 114, and some typo corrections	1,2,3,6,7,8,10,11,12,13,14,15, 16,19,20,25-45, 48,63,68,76,85, 89, 90,92,96,107,108,111,112, 114-129
Revision 6	November 17, 2014	Chief Flight Instructor change	1,2,3,8,19
Revision 7	December 21, 2015	Rewrite of Flight TCO	1-12,15-21,24,44-133

Record of Revision Changes Cont'd

Number	Date of Revision	Reason for Change	Pages

Commercial Pilot – Airplane Multi-Engine Land

1. North Star Aviation, Inc. located at Mankato Regional Airport, Mankato, Minnesota is owned and operated as:

North Star Aviation, Inc.
3030 Airport Road North
Mankato, Minnesota 56001

2. **COURSE TITLE**: Commercial Pilot – Airplane Multi-Engine Land

3. This TCO meets all of the curriculum requirements for the Commercial Rating Certification Course contained in appendix D of 14 CFR Part 141. The curriculum contents are intended to parallel the FAA Commercial Rating Airplane Practical Test Standards (PTS).

4. The training syllabus herein contains a separate ground training course and a flight training course which can be taught concurrently or separately. Separately is for the situation where the student is able to only participate in the ground school and is not able to fly. In this situation the student can complete the ground school and successfully pass the FAA knowledge test and that would be then acceptable for 24 calendar months from the time the knowledge test is completed. They may then begin the flight portion anytime and as long as they complete the flight portion prior to the knowledge test expiration credit for the ground school will be given.

5. **COURSE OBJECTIVE**: The student will obtain the knowledge, skill and aeronautical experience necessary to meet the requirements for a Commercial Airplane Category with a Multi-Engine Land Class Rating.

6. **COMPLETION STANDARD:** The student must demonstrate through written tests, practical tests, and through appropriate records that he/she meets the knowledge, skill and experience requirements necessary to obtain a Commercial Rating with an airplane category rating. Each student should satisfactorily complete at least one stage of training within 100 days or the Chief Flight Instructor may terminate you from the program. Students that are inactive for more than 180 days may be terminated from the course.

7. **GROUND INSTRUCTIONAL FACILITIES:** Ground instruction facilities are located at North Star Aviation, Inc. in the Terminal Building at Mankato Regional Airport, and Armstrong Hall at Minnesota State University Mankato Campus.

A. The training space at North Star Aviation Inc. in the terminal building at Mankato Regional Airport consists of the student briefing area is 36’ by 46’ and consists of instructor cubicles with tables, 36” x 36” dry erase boards, aeronautical charts, including the current FAR AIM. North Star Aviation, Inc. has the following resources available to the students; a Garmin 430/530 computer based simulator, Garmin 500 computer based simulator, Poster of Aircraft Instrument panel, Bicycle wheel, model airplane, instrument gauges, computer, monitor, and keyboard. North Star Aviation, Inc. also has a conference room that is 30’ x 24‘ available for class room training and consists of a VCR player, DVD player, TV, Overhead projector, Grease Board , HP 61-110 projector and extendable projection screen. The room has nine 5 foot tables with each table able to handle two students. The space in the room can handle up to 12 tables and 24 students. (Diagram 1, Appendix A)

B. The training Rooms in Armstrong Hall at Minnesota State University Mankato Campus rooms consists of a Sharp Data Projector, Crestron Control System, Elmo Document Camera, Sony DVD/VCR Combo, Laptop Hookup, and a dry erase board or chalk board. (See Floor Plans in Diagram 2, 3 & 4, Appendix A)The room numbers, square footage and corresponding capacities are listed below:

ROOM	STUDENT CAPACITY	ROOM SQUARE FOOTAGE
Room 302	33	503
Room 303	36	669
Room 304	43	674
Room 305	48	762
Room 306	58	881
Room 308	42	644
Room 309	40	733

Room 310	32	501
Room 311	41	653
Room 314	40	764
Room 315	34	671
Room 316	44	664
Room 317	30	501
Room 319	33	500
Room 320	32	665
Room 321	38	671
Room 322	35	765
Room 323	58	881
Room 325	30	502
Room 326	25	502
Room 327	26	528
Room 330	43	882
Room 331	30	740
Room 332	10	673
Room 333	30	669
Room 334	33	501
Room 202	33	504
Room 203	27	665
Room 204	27	670
Room 205	40	761
Room 208	40	650
Room 209	36	741
Room 211	42	650
Room 213	55	882
Room 214	50	761
Room 215	38	581
Room 216	40	763
Room 217	33	503
Room 219	33	505
Room 220	40	761
Room 221	28	581
Room 222	50	770
Room 225	30	522
Room 231	50	762
Room 232	44	668
Room 233	42	668
Room 101	161	1539
Room 102	112	1282
Room 123	42	633

C. The training rooms at both locations are well lighted and the temperature is thermostatically controlled. Each room is well ventilated and conforms to the city of Mankato building, sanitation and health codes. The rooms are designed and located so that students will not be distracted by instruction conducted in the other rooms or by flight and maintenance operations at the airport.

8. **AIRPORT:** Mankato Regional Airport is the main operations base for training in this course. All flight training originates from this airport. Mankato Regional Airport has hard surfaced runways and meets the requirements of 14 CFR Part 141.38 of the FAR's for day and night flight operations. The airport has fuel services available for North Star Aviation customers from Monday through Friday 0700 – 1800, and Saturday and Sunday 0700 through 1700 local. Maintenance is available Monday through Friday 0700 – 1700. The Waseca airport (KACQ) will be used as an alternative student pilot solo takeoff and landing practice area after an initial solo flight has been accomplished at the Mankato airport (KMKT) as needed. This will be used on an on demand basis with no more than 1 student pilot assigned to the Waseca airport for solo takeoff and landings. The student Pilot will receive a log book endorsement for repeated solo cross country after having flown to and from each airport. Procedures to get to and from Waseca airport in (ALPHA) designated practice area and other practice areas can be reviewed in the KMKT Practice Areas in **Appendix A – Diagram 8**. Private pilot rated students will use the Fairbault airport (KFBL), Owatonna airport (KOWA) and New Ulm airport (KULM) during periods of high student pilot solo takeoff and landing activity.

9. **AIRPORT FACILITIES:** The Mankato Regional Airport is equipped with two flight briefing areas. These areas are located in the airport's terminal. Both briefing areas are equipped with Televent DTN and a telephone is also available with the number posted on how to dial the Minneapolis Automated Flight Service Station (AFSS). These facilities are used by students and regular customers of North Start Aviation. The student briefing area is 36' by 46' and consists of instructor cubicles with tables, dry erase boards, aeronautical charts, including the current FAR AIM. North Star Aviation, Inc. also has a conference room that is 30' x 24' available for class room training and consists of a VCR player, DVD player, TV, Overhead projector, Grease Board , HP 61-110 projector and extendable projection screen. The room has nine 5 foot tables with each table able to handle two students. The space in the room can handle up to 12 tables and 24 students. The facilities are used exclusively by students, air taxi pilots, aircraft salesmen, transient pilots, and regular customers of North Star Aviation, Inc. The local practice areas are shown and described on a detailed chart posted on the wall in the dispatch area. A safety information board is maintained on the wall next to dispatch and a monitor can be viewed by students at the dispatch area with continuous updated KMKT local airport weather

10. **SIMULATION TRAINING**: Two **Redbird FMX 1000 Advanced Aviation Training Devices (AATD)** will be used for simulation training. They are both located in one room that is 30' x 24' with two 36 'x 36" dry erase boards on the walls. The Redbird FMX 1000 features an electric motion platform, fully enclosed cockpit, wrap around exterior visuals, quick change cockpit configurations for single and multi- engine, traditional and glass cockpit, center and left side control, compatible with headset, defined mission compatible with scenario based training, complete terrain and airport database, instructor station inside cockpit, and standard 110 power source. Each simulator is equipped with a Garmin 430 and a Garmin 530 avionics package. A copy of FAA letter of authorization can be found in **Appendix A – Diagram 5.** The Redbird FMX 1000 AATD may be used on lessons **#4, #10, #38, #43, #48, #51, #52 and #62** and as needed for any repeated aircraft Flight lesson. Flight Trainer lessons **#4, #10, #48, #51, and #52** will not be flown in an aircraft and aircraft flight lessons will not be flown in a Flight Trainer.

11. **AIRCRAFT:** The PA-28 Fixed gear airplane can be used for training in flight stages 1 and 2. The PA-44-180 can be used for flight training in stage 3. The aircraft will meet the requirements of 14 CFR Part 141.39. Radio equipment will consist of at least one 360 channel transceiver and at least one VOR navigational receiver and a 4096 code transponder with Mode C capability. The PA-28, PA-44-180 airplanes are equipped for day and night VFR and IFR flying as specified in 14 CFR Part 91.205 (a) (b) (c) (d).

12. **CHIEF FLIGHT INSTRUCTOR:** The Chief Flight Instructor shall meet 14 CFR Part 141.35 requirements and hold at least a Commercial Pilot Certificate in a Single and Multi -Engine Airplane. The Chief Flight Instructor must be the holder of a flight instructor certificate with an airplane category rating with a single-engine and multi-engine class rating and an instrument airplane rating. The Chief Ground Instructor will also hold an Advanced Ground Instructor rating and an Instrument Ground Instructor rating. Duties: Conduct initial and annual qualification checks of flight instructors, document all delegations of duties, certification of training records, graduation certificates, stage and final test reports, stage and final test recommendations as to pass or recommendations for additional training. The Chief Flight Instructor will be available for consultation if not in the office by cell phone, telephone, email and/ or text. The Chief Flight Instructor will maintain overall responsibility to improve and documentation of flight school training program**.**

13. **ASSISTANT CHIEF FLIGHT INSTRUCTOR(S):** The Assistant Chief Flight Instructor(s) will meet the 14 CFR Part 141.36 requirements and hold at least a Commercial Pilot Certificate in a single engine and multi-engine airplane. The Assistant Chief Flight Instructor must be the holder of a flight instructor certificate with an airplane category rating with a single-engine and multi-engine class rating and an instrument airplane rating. Delegated Duties: Conduct initial and annual qualification checks of flight instructors, stage and final test recommendations as to pass or recommendations for additional training. The Assistant Chief Instructor will also help review certification of training records, graduation certificates, stage and final test reports. The Assistant Chief Flight Instructors will be available for consultation if not in the office by cell phone, telephone, email and / or text.

14. **SENIOR CHECK INSTRUCTORS:** Each Senior Check Instructor will meet the requirements of a Check Instructor. Each Senior Check Instructors training file will note the approved courses they may perform student stage checks, end of course tests, and instructor proficiency checks.

15. **CHECK INSTRUCTORS:** Each Check Instructor under 14 CFR Part 141.37 must be the holder of at least a Commercial Pilot Certificate in a single-engine and multi-engine airplane. The Check Instructor must be the holder of a flight instructor certificate with an airplane category rating with a single-engine and multi-engine class rating and an instrument airplane rating.
Each Check Instructors training file will note the approved courses they may perform student stage checks and end of course tests.

16. **FLIGHT INSTRUCTORS:** Each Flight Instructor assigned to this course must be the holder of at least a commercial pilot certificate in a single-engine and multi-engine airplane. The instructor must be the holder of a flight instructor certificate with an airplane category rating with a single-engine and multi-engine class rating and an instrument airplane rating. Perform course training as specified in Syllabus and document training in student training record.

17. **CHIEF GROUND INSTRUCTOR:** The Chief Ground Instructor for the Private Pilot Ground School Course, Instrument Pilot Ground School Course, Commercial Pilot Ground School Course will meet the requirements of 14 CFR Part 141.35 (e) .

18. **GROUND INSTRUCTORS:** The ground instructors for this course will meet the requirements under 14 CFR Part 141.81, holding either an Advanced Ground Instructor or Certified Flight Instructor rating to teach the Private Pilot and Commercial Pilot ground course. For ground instruction for the Instrument rating the ground instructor will hold an Instrument Ground Instructor or Certified Flight Instructor Instrument Airplane rating. Duties: Train according to the course syllabus and document training in each student's ground school training record.

The Minnesota State University ground instructors will document ground instruction of each student attending a class. This will be accomplished electronically or by an attendance roster completed by each faculty ground instructor of each student's attendance in class. Should a student fail to attend a class, the session must be made up by either a Minnesota State University ground instructor or a North Star Aviation, Inc. ground instructor. Each class attendance roster during a week will be emailed, faxed or delivered by the following Monday to the Chief Flight Instructor or the Assistant Chief Flight Instructor for entry into the students ground school training record for the following courses:

- Private Pilot Ground School Course
- Instrument Pilot Ground School Course
- Commercial Pilot Ground School Course

19**. Dispatcher:** A Dispatcher may release training flights. The dispatcher will be given training on how to enter aircraft information, student information, review student flight log books for appropriate endorsements if necessary, review currency, print dispatch release, and required pilot documents. Training will be documented in each dispatchers training file. The dispatcher will understand maintenance due dates and help coordinate with maintenance inspections coming due with aircraft availability. The dispatcher will help document weekly student attendance and flight training records as necessary and directed by the Chief Flight Instructor.

20. **Ground Course Testing:** The following ground training courses:

- Private Pilot Ground School Course
- Instrument Pilot Ground School Course
- Commercial Pilot Ground School Course

Ground Instructor will have at least one Stage exam at the end of each Ground training Stage. The exam will be instructor created and will represent the content that was covered within the stage. The method of testing should represent a method of testing that is currently in practice for the FAA knowledge test, however, it is not limited to that method.

21**. Additional Required Flight Training:** Additional flight training if needed may be performed in the Redbird FMX 1000 Advanced Aviation Training Devices (AATD).

22**. The following reference books and reference materials may be used in this course:**

AIM	Aeronautical Information Manual	AC 60-22	Aeronautical Decision Making
FAR's	Federal Aviation Regulations	AC 61-65E	Certification: Pilots and flight Instructors
FAR's	Federal Aviation Regulations EXPLAINED by Kent Jackson	AC 61-84	Role of Preflight Preparation
NTSB 830	Notification & Reporting of Aircraft Accidents & Incidents	AC 61-107A	Operation of Aircraft at altitudes Above 25,000 feet and/or Mach Numbers (Mmo) Greater than .75
FAA-H-8083-25A	Pilot's Handbook of Aeronautical Knowledge	AC 120-12	Private carriage Versus Common Carriage of Persons or Property.
FAA-H-8083-1A	Aircraft Weight and Balance Handbook	AC 120-51	Crew Resource Management Training
FAA-H 8083-6	Advanced Avionics Handbook	AC 00-54	Pilots Windshear Guide
FAA-H-8083-15A	Instrument Flying Handbook	AC 00-24B	Thunderstorms
FAA-H-8083-19A	Plane Sense	AC 20-73A	Aircraft Ice Protection
FAA-H-8261-1A	Instrument Procedures Handbook	AC 90-48C	Pilot's Role in Collision Avoidance
AC 00-6	Aviation Weather	AC 90-23E	Aircraft Wake Turbulence
AC 00-45G	Aviation Weather Services	AC 61-67	Stall and Spin Awareness Training

AC 90-66A Recommended Standard Traffic Patterns and Practices for Aeronautical Operations at Airports without Operating Control Towers

AC 91-51A Effect of Icing on Aircraft Control and Airplane Deice and Anti-ice Systems

AC 91-67 Minimum Equipment for General Aviation Operations under FAR Part 91

POH / AFM Pilot Operating Handbooks / Aircraft Flight Manuals (Various Manufactures)

FAA Airport Facility Directory

Commercial Pilot Practical Test Oral Study Guide instructor version with answers & explanations – by June Bonesteel

Flight Instructor ASEL Practical Test Oral Study Guide instructor version with answers & explanations – by June Bonesteel Volume 1, 2 & 3

Jeppesen Commercial / Instrument Pilot Book

Jeppesen Instrument / Commercial DVD Course

Jeppesen Instrument /Commercial Image CD ROM Software

Gleim Commercial Pilot Written Test Bank

FAA Commercial Pilot Practical Test Standards

North Star Aviation, Inc. Commercial Pilot printed or power point standardized training presentation

The Garmin GNS 430 A Pilot Friendly Manual by Jon Dittner

U.S. Terminal Procedures Approach Charts and Enroute Charts

Jeppesen Terminal Procedures Charts and Enroute Charts

Everything Explained for Professional Pilots by Richie Lengel

Aircraft Systems For Pilots by Dale De Remer, Phd

ASA Commercial Pilot Oral Exam Guide

North Star Aviation, Inc. Commercial Rating Airplane printed or power point standardized Flight training presentation
North Star Aviation, Inc. Standard Operating Procedures Piper Warrior III PA-28-181
North Star Aviation, Inc. Standard Operating Procedures Piper Aircraft Seminole PA-44-180

VTS, Inc. VTS Training Systems Piper Warrior and Piper Seminole aircraft systems training software

Garmin's 400 and 500 Series online flight simulator

Garmin's 400W and 500W Series downloadable flight simulator

Jeppesen's Garmin 430 and Garmin 530 Training Software

Garmin's 500 Series downloadable flight simulator
Garmin's G1000 Downloadable Simulator
Garmin's G1000 Training program

In addition, at the discretion of the instructor, they may refer to any supplemental source of information (Advisory Circulars and other FAA publications) in order to increase the quality of the training along with NASA training videos, FAA Safety Videos and internet based AOPA Air Safety Foundation web based safety training may be used.

23. **Flight Lesson Grading**

S	Task accomplished meets lesson completion standards
I	Incomplete needs additional training
PC	Previously Completed.
NP	Not Performed

- For a lesson to be Completed all items on that lesson must be signed off with an "S"
- When a lesson is flown a second or more times to complete, any items that were completed on previous flights of that lesson shall be marked with PC indicating that the item was previously completed.
- In the case where items were not trained or not performed on that flight the instructor will mark those items with "NP" indicating not performed. These "NP" items must be marked with an "S" on Subsequent flights to complete the lesson.
- In the event a student receives a **"I"** (Incomplete & Needs Additional Training) in a lesson.
    1. For a lesson to be completed all items on the lesson must have been graded with an "S".
    2. The instructor must give additional ground or flight training in the area an "I" was given, on the next training session for that lesson.
    3. The additional training will be documented by dispatching the lesson again and only the items that were graded with "I" shall be flown on that lesson all other items will be marked PC. Place an "S" in the box if completion standards are met or another "I". If an "I" is given the lesson will remain open until all items on the lesson meet the completion standards. If the lesson items need to be flown more than 2 times the lesson must reviewed with the Chief Flight Instructor or Assistant Chief Flight Instructor before further flights are conducted. Once an "S" mark is received in all items of the lesson the lesson will then be complete.
    4. Students may not progress to the next lesson until the lesson is completed
    5. If an item on the lesson is marked with and NP the lesson will remain open until all items on the lesson have been graded with an "S".
    6. Lessons with items that are labeled "if aircraft equipped" may be graded "NP" in the case where the aircraft of Flight trainer are not equipped to perform the procedure. In this case the lesson will be considered complete with only those items graded "NP".

24. **Enrollment**

As required in 14 CFR Part 141.93 (a) a copy will be defined as: A written copy, emailed copy, an electronic copy in a PDF format that may be distributed to the student through a central download site or delivered through an electronic means.

25. **Graduation**

The Chief Flight Instructor may reduce flight training and ground training requirements of this training course outline provided, FAR 141 Appendix D Commercial Rating Course requirements have been complied with, and the exception is documented in the students file. Reductions are only allowed for areas where this Training Course Outline exceeds the requirement s of 14 CFR Part 141 Appendix D.

26. **Documentation of student flight time**

Effective January 1, 2015, all students enrolling in a certification course will have their records maintained electronically in the North Star Aviation electronic training record system. The electronic format will also require an electronic backup file of the training data. All lessons in the electronic system will reflect the TCO presented here and all flights will be tracked to the corresponding lesson flown. Each lesson will be electronically signed by the Student and Instructor who conducted the lesson. Each time a lesson is flown it will be individually dispatched to show exactly what was taught. Each flight will follow the grading system described in item 23 above.

27. **Performing Lessons out of order**

While flight lessons in this TCO are intended to be conducted in sequence, lesson sets 6-8, 11-13, and 15-17, are allowed to be conducted in any order within each set. It is permissible to perform the solo flights out of order in Stage 2, as long as the dual lesson covering the lesson objective for the solo lesson is completed prior. In Stage 3, all lessons must be conducted in order, however, for those lessons that are combined (per the lesson objective) the lessons may be conducted in any sequence.

28. Training conditions that lessons are conducted under

In Stage 1 or Stage 3 all cross country lessons may be conducted in either Day or Night time conditions unless specifically noted in the lesson of the type of conditions to be flown. The flight lessons that specify conditions and are noted on the flight lesson layout table are: 2, 6, 18, 46, 47, 56, 57 these lessons must be flown as specified in the lesson.

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FLIGHT TRAINING SYLLABUS DESIGN

The flight training syllabus is divided into **three** stages, each providing an important segment of pilot training. Each stage builds on previous learning and, therefore, should be completed in sequence. However, to provide a degree of flexibility for adapting to individual student needs and the training environment, the syllabus lessons may be altered with approval of the chief flight instructor. Any deviation should not disturb the course continuity or objective. The following discussion presents a description of the primary areas of study in each stage.

(a) Flight Stage I

Flight Stage I of the syllabus is designed to provide the student with a basic foundation in normal airplane single-engine land operations to include night flying and VFR Navigation.

In addition, the applicant will increase his/her proficiency by performing IFR dual and solo flights in the airplane single-engine land.

The Chief Flight Instructor, assistant Chief Flight Instructor, Senior Check Instructor or a Check Instructor will check the student's proficiency and knowledge during the Flight Stage Check 1 in Flight lesson # 20, and further review may be pursued as necessary.

(b) Flight Stage II

Flight Stage II of the syllabus builds upon the skill and knowledge acquired in Stage I.
In this stage, the student will learn new commercial maneuvers and increase his/her proficiency to a level, which is appropriate for the Commercial Pilot Certificate.

The Chief Flight Instructor, Assistant Chief Flight Instructor, or Check Instructor will check the student's proficiency and knowledge during Stage 2, flight lesson #37, after completing flight stage 2 training.

(c) Flight Stage III

Stage III of the syllabus provides the skill and knowledge required to operate the multi-engine airplane in both VFR and IFR conditions at a level that meets or even exceeds the proficiency requirements set forth by the current Commercial Pilot Practical Test Standards.

The Chief Flight Instructor or Assistant Chief Flight Instructor or Check Instructor will check the student's proficiency and knowledge during Flight Stage Check 3 in Flight lesson #67, and further review may be pursued as necessary.

The flight training portions of the **Commercial Pilot –Airplane Multi-Engine Land** are completed in Flight Stage III when the student has successfully passed the Final Stage Exam / End-of-Course Check.

(d) Preflight Orientation

Prior to each dual flight, the instructor must provide the student with an overview of the subject matter to be covered during the lesson. It is important that the instructor defines unfamiliar terms, explain the maneuvers and objectives of each lesson, and discuss human factors concepts related to each lesson.

Each Flight Lesson contains Preflight Discussion information, which is intended to provide a basis for the instructor's preflight overview. This overview should be flexible; these are only suggested topics. Every item does not need to be covered. The preflight orientation should be tailored to the specific flight, the local environment, and especially for the benefit of the individual student.

(e) Airplane Practice

Airplane practice must be conducted so that the student obtains the maximum benefit from each flight. Each flight should begin with a review of previously learned maneuvers before any new maneuvers are introduced.

Prior to each flight, the instructor should carefully instruct the student in the maneuvers to be performed during the flight and what is to be accomplished. This guidance will ensure that student receives maximum benefit from the flight.

(f) Post-Flight Evaluation

The post-flight evaluation is at least as important as the preflight orientation. During each post-flight session, the student must be debriefed thoroughly. Noticeable advancement should be apparent and recommendations should be made for improvement, where appropriate. This action is a valuable instructional technique because it increases retention and, to some degree, prepares the student for the next lesson.
As a guide, a minimum amount of ground instruction is recommended for preflight and post-flight briefings combined on each lesson. If necessary, additional time should be allotted.

(g) Student Stage Checks

Stage checks measure the student's accomplishments during each stage of training. The conduct of each stage check is the responsibility of the chief flight instructor. However, the chief flight instructor may delegate authority for conducting stage checks / end-of-course tests to the Assistant Chief Flight Instructor or to the designated Check Instructor. This procedure provides close supervision of training and may provide another opinion on the student's progress. The stage check also gives the Chief Fight Instructor an opportunity to check the effectiveness of the instructors.

An examination of the building-block theory of learning will show that it is extremely important for progress and proficiency to be satisfactory before the student enters a new stage of training. Therefore, the next stage should not begin until the student successfully completes the stage check. Failure to follow this progression may defeat the purpose of the stage check and degrade the overall effectiveness of the course.

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North Star Aviation Inc.
Commercial Pilot - Airplane Multi-Engine Land

FLIGHT LESSON LAYOUT

	DUAL	SOLO	CROSS COUNTRY	CROSS COUNTRY NIGHT	FLIGHT TRAINER	DAY	NIGHT	INSTR	ME COMPLEX	SE	PRE/POST
	78	**42**	**65**	**9.0**	**12**	**2**	**13**	**31.7**	**38**	**70**	**50.7**

LESSON	TOTAL TIME	DUAL	SOLO	CROSS COUNTRY	CROSS COUNTRY NIGHT	FLIGHT TRAINER	DAY	NIGHT	INSTR	ME COMPLEX	SE	PRE/POST
1												4.0
2	4.0	4.0		4.0	0.0			2.0			4.0	0.5
3												3.0
4	1.6	1.6				1.6			1.6			0.5
5	3.0	3.0		3.0					2.5		3.0	0.5
6	3.0		3.0	3.0				2.0			3.0	0.3
7	3.0		3.0	3.0					0.0		3.0	0.3
8	3.0		3.0	3.0					0.0		3.0	0.3
9	4.0	4.0		4.0					3.3		4.0	0.5
10	1.6	1.6		0.0		1.6			1.6			0.5
11	3.0		3.0	3.0							3.0	0.3
12	3.0	3.0		3.0					2.0		3.0	0.5
13	3.0		3.0	3.0							3.0	0.3
14	4.0	4.0		4.0					3.0		4.0	0.5
15	3.0		3.0	3.0							3.0	0.3
16	3.0		3.0	3.0							3.0	0.3
17	4.0		4.0	4.0							4.0	0.3
18	2.0		2.0	2.0	2.0			2.0			2.0	0.3
19	3.0	3.0		3.0					2.0		3.0	0.5
20	2.0	2.0							1.0		2.0	1.0
Stage 1 Totals	**53.2**	**26.2**	**27.0**	**48.0**	**2.0**	**3.2**	**0.0**	**6.0**	**17**	**0.0**	**50.0**	**14.7**

FLIGHT LESSON LAYOUT

21												1
22	1.5	1.5									1.5	0.5
23	1.5	1.5									1.5	0.5
24	0		0								0	1
25	1.5	1.5									1.5	0.5
26	1.6		1.6								1.6	0
27	1.5	1.5									1.5	0.5
28	1.5	1.5									1.5	0.5
29	1.6		1.6								1.6	0
30	1.5	1.5	0								1.5	0.5
31	1.8	0	1.8								1.8	0
32	1.5	1.5	0								1.5	0.5
33	1.5	1.5	0								1.5	0.5
34	1.5	1.5									1.5	0.5
35	0		0								0	1
36	1.5	1.5	0								1.5	1
Stage 2 Totals	**20**	**15**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**8.5**
37	0											2
38	1.5	1.5				1.5			1.5			0.5
39	0	0							0	0		2
40	1.5	1.5								1.5		0.5
41	1.5	1.5				0			0	1.5		0.5
42	0	0								0		2
43	1.5	1.5				1.5		0	0	0		0.5
44	1.5	1.5	0	0			0			1.5		0.5
45	0	0			0			0		0		2
46	2	2		2			2			2		0.5
47	2	2		2	2	0	0	2		2		0.5

FLIGHT LESSON LAYOUT

48	1.5	1.5		0	0	1.5		0	1.5	0		0.5
49	0	0		0				0	0	0		2
50	1.5	1.5	0	0					1.3	1.5		0.5
51	1.5	1.5	0			1.5		0	1.5	0		0.5
52	1.5	1.5	0			1.5		0	1.5	0		0.5
53	4	4		4					2	4		0.5
54	4	4		4					2	4		0.5
55	5	0	*5	5						5		0.5
56	2.5	0	*2.5	0	2.5			2.5	0	2.5		0.5
57	2.5	0	*2.5		2.5			2.5	0	2.5		0.5
58	0	0							0	0		2
59	1.5	1.5								1.5		0.5
60	1.5	1.5								1.5		0.5
61	1.5	1.5				0			1.3	1.5		0.5
62	1.3	1.3				1.3			1.3	0		0.5
63	1.5	1.5							0.2	1.5		.5
64												2
65	2	2							0.3	2		0.5
66	2	2							0.3	2		2.5
Stage 3 Totals	**46.8**	**36.8**	***10**	**17**	**7.0**	**8.8**	**2**	**7**	**14.7**	**38**	**0**	**27.5**
Total	**120**	**78**	**42**	**65**	**9**	****12**	*****2**	*****13**	**31.7**	**38**	**70**	****50.7**

*Student performing duties of PIC under the Supervision of authorized instructor.

**(AATD) Flight Trainer credited towards instrument instruction per Redbird FMX 1000 FAA authorization letter in Appendix A - Diagram 5. The maximum allowable flight trainer time in this course per this authorization letter is 24 hours.

***Pre & Post ground briefing in the flight training program are recommended amounts of time and may be less than 51.7 total hours.

****Night vs Day time only the lessons that are required to be accomplished in specified conditions are noted on this table. All other flights are at the Instructor's discretion.

COMMERCIAL PILOT – AIRPLANE MULTI-ENGINE LAND

STAGE I

IFR CROSS COUNTRY NAVIGATION

VFR CROSS COUNTRY NAVIGATION, INSTRUMENT CROSS COUNTRY NAVIGATION AND APPROACHES SINGLE-ENGINE AIRPLANE LAND

53.2 HOURS TOTAL FLIGHT TRAINING:

STAGE OBJECTIVES

Stage I of the syllabus is designed to provide the student with a strong foundation in the airplane single-engine land to prepare him/her for the commercial pilot certification. The student will increase proficiency in cross country operations with focus on IFR navigation in day and night operations.

STAGE COMPLETION STANDARDS

At the completion of this stage, the student will perform all the maneuvers and procedures for IFR cross country flight. The student will perform IFR cross country navigation at a proficiency level that meets the criteria set forth in the current FAA Instrument Pilot Practical Test Standards.

PRE & POST GROUND: LESSON 1

4.0 HOURS TOTAL GROUND INSTRUCTION

LESSON REFERENCES:

AIM Chapter 3 Airspace
AIM Chapter 4 Section 2 - Radio Phraseology & 3 - Airport Operations
AIM Chapter 7 Safety of Flight
AIM Chapter 8 Medical Factors for Pilots
Aeronautical Book of Knowledge Ch. 17

LESSON OBJECTIVES:

- To introduce the student to commercial flight training and enhance their ability to make good aeronautical decisions (ADM) through scenarios created by the instructor in each of the topics outlined in this lesson. Review important material that goes into ADM and move the student's ability to use this information to an application and correlation level in each of the areas discussed here.

ACADEMIC CONTENT:

Review:

- Risk Management
- Controlled Flight into Terrain
- Runway Incursions
- Logging of pilot time

VFR operations (include deteriorating wx)

AEROMEDICAL FACTORS

Commercial PTS: symptoms, causes, effects and corrective actions for: hypoxia, hyperventilation, middle ear/sinus problems, spatial disorientation, motion sickness, carbon monoxide poisoning, stress/fatigue, dehydration

NATIONAL AIRSPACE

- Commercial PTS: elements related to National Airspace System: Basic VFR minimums for all classes of airspace, operating rules, pilot certification, and aircraft equipment required for Class A through G airspace, special use, special flight rules areas, and other airspace areas. Use scenario transitioning between different airspace environments.

EMERGENCY EQUIPMENT & SURVIVAL GEAR

- Winter Operations
- Emergency Equipment on each of our Aircraft

NIGHT OPERATIONS

- Night Vision: Rods & Cones
- Night Illusions
- FAA Safety Program: "Operation Lights On"

NAVIGATION

- Pilotage
- Dead Reckoning
- Diversion
- Lost Procedures
- Navigation Systems
- Radar Services

AIRPORT OPERATIONS

- Radio Communications: Class B, C, D & non-towered airports
- Professional, standard (AIM), abbreviated communications
- Proper Phraseology with ATC and Non-towered airports

PREFLIGHT PROCEDURES

- Cockpit Management

PREFLIGHT PREPARATION

- Certificates and Documents
- In aircraft inspection look at all documents
- Passenger & Taxi briefings
- Airworthiness Requirements
- PIC responsibilities
- Professional approach every flight

PREFLIGHT WEATHER INFORMATION

- METAR, TAF, FA, Surface Analysis Chart
- Radar Summary, Significant Weather Prognostic Chart, Winds and Temperature Aloft
- Convective Outlook Chart, AWOS, ASOS, and ATIS Reports, NOTAMS, AIRMETS & SIGMETS
- Use a scenario that would take the flight through adverse weather somewhere in the country, if possible, to determine if they can go, alternate routes, and if not, when they could go.

COMPLETION STANDARDS:

- Having been given a scenario from the instructor, student will be able to apply what he/she knows about the topic to determine a course of action that would result in a safe conclusion to the flight. Throughout the lesson, student will demonstrate the use of standard risk management tools

STUDY ASSIGNMENT:

Chapter 17 Aeronautical Book of Knowledge
Risk Management. FAR Part 91

FLIGHT: LESSON 2

4.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
4.0 HOURS DUAL **VFR** CROSS COUNTRY
2.0 HOURS **NIGHT VFR**
0.5 HOURS PRE/POST

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be introduced or reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- This Flight scenario should incorporate the transition from day operations to night operations.
- The scenario and plan of action should be executed to challenge the student to further their piloting abilities as well as Risk Management skills. Instructor shall include the Scenario given in the lesson remarks

Note: *The instructor will assign a cross country flight that is 100 nautical mile straight-line distance on one of the legs and every leg must be more than 50 nautical miles.*

- *One airport on the cross country flight will be tower controlled to include taxi to FBO and marshalling*
- *All flight time will be logged as cross country flight time on this lesson.*

INTRODUCE:

- Preflight Orientation and Preparation
- Explain the VFR Cross Country Flight Plan
- External Power Start Procedures
- Procedures for self-service fueling
- Preflight Procedures

PREFLIGHT WEATHER INFORMATION

Preflight Orientation and Preparation
Electronic Briefing and filing of Flight Plan

- Present to Instructor a Summary briefing to include:
- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective
- Outlook Chart, AWOS, ASOS, and ATIS Reports.
- Relate to Risk Management for this flight

Preflight Procedures:

- Use of checklist
- Preflight inspection
- Cockpit organization
- Passenger Briefing

Preflight Procedures Cont.:

- Taxi Briefing
- Review hot spots & runway incursions avoidance
- Positive change of controls
- Run up procedures

AIRPORT OPERATIONS

- Radio Communications
- Traffic Pattern

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal/Crosswind Takeoff(s) and Climbs(s)
- Normal/Crosswind Approach(s) and Landing(s)

AIRCRAFT PERFORMANCE

- Leaning procedures (above 5,000 for PA28 as per Piper)
- Endurance calculations
- Ground Speed verification against planning
- Use of electronic flight log vs paper

NIGHT OPERATIONS

- Night Illusions

NAVIGATION

- Pilotage Dead Reckoning
- Use of Navigation Systems and Radar Services
- Diversion
- Lost Procedures
- Radio-Communications
- Taxi to FBO at control tower
- Marshalled
- Situational Awareness
- Aeronautical Decision Making
- Single Pilot Resource Management

EMERGENCY OPERATIONS

- Loss of Engine Enroute
- ATC Light Signals
- Systems and Equipment Malfunctions
- Emergency Approach and Landing Procedures
- Emergency Equipment and Survival Gear

POST FLIGHT PROCEDURES

Parking & Securing Procedures
Post Flight Inspections

COMPLETION STANDARDS:

- The student will demonstrate the ability to make good aeronautical decisions throughout the flight.
- The student will demonstrate use of standard Risk Management tools in preparation as well as throughout the flight
- Student will fly the flight to current Private PTS standards as appropriate for all maneuvers and flight scenarios within the lesson.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

PRE & POST GROUND: LESSON 3

3.0 HOURS TOTAL GROUND INSTRUCTION
Instrument Review and cross country prep lesson

LESSON REFERENCES:

AIM Chapter 3 Airspace
AIM Chapter 4 Section 2 - Radio Phraseology & 3 - Airport Operations
AIM Chapter 7 Safety of Flight
Aeronautical Book of Knowledge Ch. 17

LESSON OBJECTIVES:

To continue to develop and enhance the student's ability to make good aeronautical decisions (ADM) through scenarios created by the instructor in each of the topics outlined in this lesson. Review important material that goes into ADM and move the student's ability to use this information to an application and correlation level in each of the areas discussed here.

Review:

- Risk Management
- Logging of pilot time
- VFR/IFR operations (include deteriorating wx)

NAVIGATION

- Composite Flight Plan VFR to IFR or reverse
- Making a Special VFR request
- Pop up clearance – when is it appropriate?
- Non radar – compulsory reporting point report (includes fix you are over, next fix & ETA, 3rd fix name only)

AIRPORT OPERATIONS

- Radio Communications: Class B, C, D & non-towered airports
- Professional, abbreviated standard communications

NIGHT OPERATIONS

- Importance of remaining on IFR flight plan until on the ground at non-towered airports
- VDP importance at night
- FAA Safety Program: "Operation Lights On"

PREFLIGHT PROCEDURES

- Cockpit Management for IFR

PREFLIGHT PREPARATION

- Certificates and Documents
- Airworthiness Requirements

PREFLIGHT WEATHER INFORMATION

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft
- Convective Outlook Chart, AWOS, ASOS, and ATIS Reports, NOTAMS, AIRMETS & SIGMETS
- Use a scenario that would take the flight through adverse weather somewhere in the country, if possible, to determine if they can go, alternate routes, and if not, when they could go.

COMPLETION STANDARDS:

- Having been given a scenario from the instructor, student will be able to apply what he/she knows about the topic to determine a course of action that would result in a safe conclusion to the flight. Throughout the lesson, student will demonstrate the use of standard risk management tools

STUDY ASSIGNMENT:

Chapter 17 Aeronautical Book of Knowledge
Risk Management. FAR Part 91

SIMULATOR: LESSON 4

1.6 HOURS TOTAL FLIGHT TRAINER
OF WHICH:
1.6 HOURS DUAL GIVEN
1.6 HOURS INSTRUMENT INSTRUCTION
.5 PRE/POST

Note: Use Redbird single engine AATD for this lesson, must be in simulator.

LESSON OBJECTIVES:

- The student will be introduced to advanced instrument departure procedures and instrument arrival procedures in Class B airspace and mountainous airports.
- The Student will demonstrate increased proficiency in performing all listed approaches and instrument procedures.
- The student should demonstrate increased proficiency in aeronautical decision making and cockpit management concept in the IFR environment while dealing with various simulated emergency procedures.

Note: *This lesson will concentrate on instrument arrivals and departure procedure and will require frequent reposition of the flight simulator to accomplish the desired training.*

This lesson will be conducted in Redbird Single Engine Simulator

INTRODUCE:

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

- Low visibility taxi at a Class B airport (1/8 mile) LAX or RNO
- Instrument Takeoff (1/8 mile visibility)
- Climb Gradients – Aircraft Ability to meet gradient
- Clearance Copying & Read Back
- DP's Instrument Departure Procedures
- Holding Procedures
- Non-precision Approach
- Missed Approach Procedure

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

Provided to log what is flown

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Instructor Choice
- Type/Location _____
- Circle or Straight in to Land
- 1 of above as Partial Panel Approach
- Type/Location _____

TAKEOFFS, LANDINGS

- Normal and/or Crosswind Takeoff and Climbs
- Normal and /or Crosswind Approach and Landing

EMERGENCY OPERATIONS

- Partial Panel - Vacuum Failure
- Partial Panel - Vacuum and Electrical HSI failure combined
- Pitot tube blocked
- Lost Communication procedures

SPECIFIC DEPARTURE PROCEDURES TO BE FLOWN

2 scenarios, one winter, one summer (calculate density altitude):

- Montrose, CO (KMTJ)
- Centennial, CO (APA) (choose 1: DENVER 8, PIKES 7, PLAINS 7)

ENROUTE

- Fly East to West over MCA at KRAP to MEA on V26 to be able to identify MRA at 17 DME using cross radial

SPECIFIC ARRIVAL PROCEDURE TO BE FLOWN

- Chicago Midway (KMDW) ENDEE THREE Arrival

COMPLETION STANDARDS:

- During the flight, the student should maintain altitude ±100 feet, headings ±10°, airspeed ±10 knots, bank angle ±5°.
- The student will demonstrate an advanced knowledge of more complex instrument departure and instrument arrival procedures
- The student will also demonstrate additional proficiency operating under IFR conditions with a partial panel failure.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT: LESSON 5

3.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
3.0 HOURS DUAL COMPOSITE CROSS COUNTRY
2.5 HOURS INSTRUMENT INSTRUCTION
.5 PRE/POST

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their aeronautical decision making (ADM) skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be introduced or reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- The scenario and plan of action should be executed to challenge the student to further their piloting abilities as well as Risk Management skills.
- In this lesson the student will demonstrate additional proficiency in flying in the IFR environment and following and executing IFR procedures. This flight will be conducted on an IFR flight plan with an IFR clearance. If the flight scenario requires student to start VFR and with changing weather need to pick up an IFR enroute or convert from IFR to VFR that is acceptable instructor shall include in lesson remarks with the Scenario given.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- IFR Cross-Country Flight Planning
- Weather Briefing
- Alternate Airports

PREFLIGHT WEATHER INFORMATION

Preflight Orientation and Preparation
Electronic Briefing and filing of Flight Plan

- Present to Instructor a Summary briefing to include:
- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective
- Outlook Chart, AWOS, ASOS, and ATIS Reports.
- Relate to Risk Management for this flight

Preflight Procedures:

- Use of checklist
- Preflight inspection
- Cockpit organization
- Passenger Briefing
- Taxi Briefing
- Review hot spots & runway incursions avoidance
- Positive change of controls
- Run up procedures

INSTRUMENT APPROACH PROCEDURES & HOLDING

- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications

Route: _____ _____ _____ _____

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

LOG ALL THAT IS COMPLETED MUST BE AT DIFFERENT AIRPORTS. A MINIMUM OF 1 PERCISION & 1 NON PERCISION REQUIRED

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Instructor Choice
- Type/Location _____
- Circle or Straight in to Land
- 1 of above as Partial Panel Approach
- Type/Location _____
- Holding:_____

TAKEOFFS, LANDINGS

- Normal and/or Crosswind Takeoff and Climbs
- Normal and /or Crosswind Approach and Landing

NAVIGATION & CROSS COUNTRY PROCEDURES

- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications
- Enroute Procedures and Clearances

POST FLIGHT PROCEDURES

- Parking & Securing Procedures
- Post Flight Inspections

COMPLETION STANDARDS:

- The student should demonstrate an increase in proficiency and confidence in IFR navigation.
- During the preflight orientation, the student should be able to plan the flight accurately making use of all applicable FAA publications and weather analysis.
- Student should demonstrate increase in proficiency in communications with ATC that follows standard radio use that is both efficient and clear and reduce verbiage that does not follow AIM.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

Review proficiency and procedures that need more improvement and prepare student for solo cross countries.

FLIGHT LESSON 6

3.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
3.0 HOURS SOLO CROSS COUNTRY
2.0 NIGHT
0.3 HOURS PRE/POST

*This lesson and the next can either be flown individually or combined with Lessons 7 & or 8 into one cross country Student must file IFR flight plan and fly on an ATC issued instrument clearance, visual approaches are acceptable in VFR conditions. Student must be instrument current for this lesson.

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- Student needs to be on an IFR flight plan with ATC clearance throughout the flight. There is no minimum requirement for approaches at each location. If MVFR or IFR conditions exist then logging of all holds and approaches, while in IMC conditions, that are ATC assigned is required.
- Instructor shall include the Scenario given in the lesson remarks

Note: *The instructor will assign a cross-country flight with three segments of at least 50 nm each*

- *One airport on the cross country flight should be tower controlled.*
- *All flight time will be logged as cross country flight time on this lesson.*

Segment*: Is defined as airport to airport*

REVIEW:

- Preflight Orientation and Preparation

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

TAKEOFFS, LANDINGS

- Normal and/or Crosswind Takeoff(s) and Climbs(s)
- Normal and/or Crosswind Approach(s) and Landing(s)

CROSS COUNTRY PROCEDURES

- Cross-Country Flight Planning
- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications
- Enroute Procedures and Clearances

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

If actual IFR conditions exist only log what is performed. No min requirement

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Student Choice
- Type/Location _____
- Circle or Straight in to Land
- Holding: _____

COMPLETION STANDARDS:

- The student should demonstrate an increase in IFR operational proficiency and confidence in the use of IFR navigation and procedures.in night conditions.
- During the preflight orientation, the student should be able to plan the flight accurately making use of all applicable FAA Publications and weather analysis.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT: LESSON 7

3.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
3.0 HOURS SOLO CROSS COUNTRY
0.3 HOURS PRE/POST

This lesson and the next can either be flown individually or combined with Lessons 6 & or 8 into one cross country Student must file IFR flight plan and fly on an ATC issued instrument clearance, visual approaches are acceptable in VFR conditions. This lesson may be flown in day or night conditions Student must be instrument current for this lesson.

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- Student needs to be on an IFR flight plan with ATC clearance throughout the flight. There is no minimum requirement for approaches at each location. If MVFR or IFR conditions exist then logging of all holds and approaches, while in IMC conditions, that are ATC assigned is required.
- Instructor shall include the Scenario given in the lesson remarks

Note: *The instructor will assign a cross-country flight with three segments of at least 50 nm each*

- *One airport on the cross country flight should be tower controlled.*
- *All flight time will be logged as cross country flight time on this lesson.*
  Segment*: Is defined as airport to airport*

REVIEW:

- Preflight Orientation and Preparation
- DUATS/800WXBRIEF or similar tool for Flight Plan

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal and/or Crosswind Takeoff(s) and Climbs(s)
- Normal and/or Crosswind Approach(s) and Landing(s)

CROSS COUNTRY PROCEDURES

- Cross-Country Flight Planning
- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications
- Enroute Procedures and Clearances

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

If actual IFR conditions exist only log what is performed. No min requirement

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Student Choice
- Type/Location _____
- Circle or Straight in to Land

COMPLETION STANDARDS:

- The student should demonstrate an increase in IFR operational proficiency and confidence in the use of IFR navigation and procedures.in day/night conditions.
- During the preflight orientation, the student should be able to plan the flight accurately making use of all applicable FAA Publications and weather analysis.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 8

3.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
3.0 HOURS SOLO CROSS COUNTRY
0.3 HOURS PRE/POST

This lesson can either be flown individually or combined with Lessons 6 & or 7 into one cross country, Student must file IFR flight plan and fly on an ATC issued instrument clearance, visual approaches are acceptable in VFR conditions. This lesson may be flown in day or night conditions. Student must be instrument current for this lesson.

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- Student needs to be on an IFR flight plan with ATC clearance throughout the flight. There is no minimum requirement for approaches at each location. If MVFR or IFR conditions exist then logging of all holds and approaches, while in IMC conditions, that are ATC assigned is required.
- Instructor shall include the Scenario given in the lesson remarks

Note: *The instructor will assign a cross-country flight with three segments of at least 50 nm each*

- *One airport on the cross country flight should be tower controlled.*
- *All flight time will be logged as cross country flight time on this lesson.*

REVIEW:

- Preflight Preparation
- Preflight Procedures
- Weather Briefing

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports, NOTAMS, AIRMETS & SIGMETS
- Relate to Risk Management for this flight

TAKEOFFS, LANDINGS

- Normal and/or Crosswind Takeoff and Climbs
- Normal and /or Crosswind Approach and Landing

CROSS COUNTRY PROCEDURES

- Cross-Country Flight Planning
- Use of Navigation Systems and Radar Services
- Radio-Communications
- Situational Awareness
- Aeronautical Decision Making
- Single Pilot Resource Management

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

If actual IFR conditions exist only log what is performed. No min requirement

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Student Choice
- Type/Location _____
- Circle or Straight in to Land

COMPLETION STANDARDS:

- The student should demonstrate an increase in IFR operational proficiency and confidence in the use of IFR navigation and procedures.in day/night conditions.
- During the preflight orientation, the student should be able to plan the flight accurately making use of all applicable FAA Publications and weather analysis.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT: LESSON 9

4.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
4.0 HOURS DUAL CROSS COUNTRY
3.3 HOURS INSTRUMENT INSTRUCTION
0.5 HOURS PRE/POST

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be introduced or reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- The scenario and plan of action should be executed to challenge the student to further their piloting abilities as well as Risk Management skills.
- In this lesson the student will demonstrate additional proficiency in flying in the IFR environment and following and executing IFR procedures. This flight will be conducted on an IFR flight plan with an IFR clearance. Instructor shall include The full scenario in lesson remarks with the Scenario given.
- This lesson will concentrate on radio communication with ATC while performing instrument approaches. One of the following two options is recommended for this lesson.

Option 1: KMKT-KMIC-KANE-KSTP-KMKT
Option 2: KMKT-KMIC-KSTC-KFCM-KMKT

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- IFR Cross-Country Flight Planning
- Weather Briefing
- Alternate Airports

PREFLIGHT WEATHER INFORMATION

Preflight Orientation and Preparation
Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective
- Outlook Chart, AWOS, ASOS, and ATIS Reports.
- Relate to Risk Management for this flight

Preflight Procedures:

- Use of checklist Preflight inspection
- Cockpit organization
- Passenger Briefing
- Taxi Briefing
- Review hot spots & runway incursions avoidance
- Positive change of controls
- Run up procedures

TAKEOFFS, LANDINGS

- Normal and/or Crosswind Takeoff and Climbs
- Normal and /or Crosswind Approach and Landing

NAVIGATION & CROSS COUNTRY PROCEDURES

- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications
- Enroute Procedures and Clearances
- Situational Awareness
- Aeronautical Decision Making
- Single Pilot Resource Management

INSTRUMENT APPROACH PROCEDURES & HOLDING

Choose 3 of the following approaches and 1 hold # of landings instructor discretion.

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Instructor Choice
- Type/Location_____
- Circle or Straight-in to Land
- 1 of above as Partial Panel Approach
- Type/Location _____
- Holding _____

INSTRUMENT PROCEDURES

- Approach Procedures to Straight-In, Missed, and/or Circling
- Situational Awareness
- Aeronautical Decision Making
- Single Pilot Crew Resource Management

EMERGENCY OPERATIONS

- Partial Panel - Vacuum Failure
- EFIS Failure if applicable
- Verbal discussion of communication failure procedures

COMPLETION STANDARDS:

- During the flight, the student should maintain altitude ±100 feet, headings ±10°, airspeed ±10 knots, bank angle ±5°. The student will demonstrate the ability to plan multiple instrument flights, perform instrument approaches, emergency operations and communications while operating in a busier instrument environment. The student will maintain approach airspeed within + 5 kts, crosswind correction and land within the touchdown zone.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

SIMULATOR: LESSON 10

1.6 HOURS TOTAL FLIGHT TRAINER
OF WHICH:
1.6 HOURS DUAL GIVEN
1.6 HOURS INSTRUMENT INSTRUCTION
.5 PRE/POST

Note:Must use Redbird single engine AATD for this lesson

LESSON OBJECTIVES:

- The lesson will concentrate on the student's ability to demonstrate increased proficiency in precision and non-precision instrument approaches to airports with complex procedures.
- The student will continue to develop better aeronautical decision making and cockpit management in the IFR environment while dealing with various simulated emergency procedures.
- The lesson will introduce an engine failure in actual conditions on an IFR flight in a single engine aircraft.

Note: *This lesson will concentrate on more complex instrument approaches; frequent reposition of the flight simulator may be required.*

REVIEW:

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

Ex: Newport News/Williamsburg (KPHF) HENRY TWO or Buffalo, New York (KBUF) BUFFALO FIVE Departures, KFCM ENCEE ONE Arrival

- Low Visibility Taxi (1/8 mile Visibility)
- Instrument takeoff (1/8 mile Visibility)
- Climb Gradients – Aircrafts Ability to meet required climb gradient
- Departure Procedures and Clearances
- Clearance Copying & Read Back
- Holding Procedures
- Non-precision Approach
- Missed Approach Procedures

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

LOG ALL APPROACHES AND HOLDS THAT ARE ACCOMPLISHED. NO SPECFIC NUMBER REQUIRED.

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Instructor Choice
- Type/Location _____
- Circle or Straight in to Land
- 1 of above as Partial Panel Approach
- Type/Location _____

EMERGENCY OPERATIONS

- Partial Panel - Vacuum Failure if applicable
- Engine Failure in Actual Conditions
- Pitot Static System Failure

NAVIGATION & CROSS COUNTRY PROCEDURES

- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications
- Enroute Procedures and Clearances
- Situational Awareness
- Aeronautical Decision Making
- Single Pilot Resource Management

COMPLETION STANDARDS:

- The Student will demonstrate the ability to safely taxi and takeoff in low visibility conditions.
- Increased proficiency in performing departure procedures, precision and non-precision approaches.
- The student will demonstrate increased proficiency in aeronautical decision making and cockpit management concepts in the IFR environment while dealing with various simulated emergency procedures.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 11

3.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
3.0 HOURS SOLO CROSS COUNTRY
0.3 HOURS PRE/POST

This Lesson must be flown with ATC clearances for all legs and may be in VFR or IFR conditions or any combination. May be flown day or night or any combination of conditions. Student must be IFR current to fly this lesson.

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be introduced or reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- Student needs to be on an IFR flight plan with ATC clearance throughout the flight. There is no minimum requirement for approaches at each location. If MVFR or IFR conditions exist then logging of all holds and approaches that are ATC assigned and in actual IFR conditions is required. Instructor shall include the Scenario given in the lesson remarks

Note: *The instructor will assign a solo cross country with a straight line distance of more than 50 nm from original point of departure and one* ***segment*** *will be more than 50 nautical miles.*

Segment means airport to airport

REVIEW:

- Preflight Preparation
- Preflight Procedures
- Weather Briefing

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

TAKEOFFS, LANDINGS

- Normal and/or Crosswind Takeoff and Climbs
- Normal and /or Crosswind Approach and Landing

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

If actual IFR conditions exist only log what is performed. No min requirement

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Student Choice
- Type/Location _____
- Circle or Straight in to Land
- Visual Approach Location(s)_____

COMPLETION STANDARDS:

- This lesson is complete when the student has conducted the assigned IFR cross country and completed the assigned tasks on this lesson.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 12

3.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
3.0 HOURS DUAL CROSS COUNTY
2.0 HOURS INSTRUMENT INSTRUCTION
3.0 HOURS DUAL On IFR Flt Plan/Clearance
.5 PRE/POST

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be introduced or reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- The scenario and plan of action should be executed to challenge the student to further their piloting abilities as well as risk management skills.
- In this lesson the student will demonstrate additional proficiency in flying in the IFR environment and following and executing IFR procedures. This flight will be conducted on an IFR flight plan with an IFR clearance. If the flight scenario requires student to start VFR and with changing weather need to pick up an IFR enroute or convert from IFR to VFR that is acceptable instructor shall include in lesson remarks with the Scenario given.

Note: *The instructor will assign an instrument cross-country flight, one leg that consists of a total straight line distance of more than 100 nautical miles from the original point of departure and at least two* ***segments*** *of more than 50 nm.*

Segment means airport to airport

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- IFR Cross-Country Flight Planning
- Weather Briefing
- Alternate Airports

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

- Holding
- Approach Procedures to Straight-In
- Missed Approach Procedures
- Circling Approach Procedure

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

LOG ONLY IF PERFORMED IN ACTUAL OR SIMULATED INSTRUMENT CONDITIONS LESSON REQUIRES 3 DIFFERENT APPROACHES EACH AT A DIFFERENT AIRPORT.

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Instructor Choice
- Type/Location _____
- Circle or Straight in to Land
- 1 of above as Partial Panel Approach
- Type/Location _____

NAVIGATION & CROSS COUNTRY PROCEDURES

- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications
- Enroute Procedures and Clearances
- Situational Awareness
- Aeronautical Decision Making
- Single Pilot Resource Management

TAKEOFFS, LANDINGS

- Normal and/or Crosswind Takeoff and Climbs
- Normal and /or Crosswind Approach and Landing

COMPLETION STANDARDS:

- This lesson is complete when the student has conducted the assigned IFR cross country flights and completed each task for review. During flight all procedures must be within FAA acceptable tolerances for IFR operations at all times.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT: LESSON 13

3.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
3.0 HOURS SOLO CROSS COUNTRY
0.3 HOURS PRE/POST

This Lesson must be flown with ATC clearances for all legs and may be in VFR or IFR conditions or any combination. May be flown day or night or any combination of conditions. Student must be IFR current to fly this lesson.

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their Aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be introduced or reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- Student needs to be on an IFR flight plan with ATC clearance throughout the flight. There is no minimum requirement for approaches at each location. If MVFR or IFR conditions exist then logging of all holds and approaches that are ATC assigned and in actual IFR conditions is required. Instructor shall include the Scenario given in the lesson remarks

Note: *The instructor will assign a solo cross country with a straight line distance of more than 50 nm from original point of departure and one* ***segment*** *will be more than 50 nautical miles.*

Segment means airport to airport

REVIEW:

- Preflight Preparation
- Preflight Procedures

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

TAKEOFFS, LANDINGS

- Normal and/or Crosswind Takeoff and Climbs
- Normal and /or Crosswind Approach and Landing

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

If actual IFR conditions exist only log what is performed. No min requirement

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Student Choice
- Type/Location _____
- Circle or Straight in to Land
- Visual Approach Location(s)_____

COMPLETION STANDARDS:

- This lesson is complete when the student has conducted the assigned IFR cross country flights and completed each task for review. During flight all procedures must be within FAA acceptable tolerances for IFR operations at all times.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 14

4.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
4.0 HOURS DUAL CROSS COUNTRY
3.0 HOURS INSTRUMENT INSTRUCTION
0.5 HOURST PRE/POST

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their Aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be introduced or reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- The scenario and plan of action should be executed to challenge the student to further their piloting abilities as well as Risk Management skills.
- In this lesson the student will demonstrate additional proficiency in flying in the IFR environment and following and executing IFR procedures. This flight will be conducted on an IFR flight plan with an IFR clearance. If the flight scenario requires student to start VFR and with changing weather need to pick up an IFR enroute or convert from IFR to VFR that is acceptable instructor shall include in lesson remarks with the Scenario given.
- This lesson will concentrate on radio communication while performing instrument approaches. One of the following two options is recommended for this lesson.

  Option 1: KMKT-KSTP-KANE-KMIC-KFCM-KMKT
  Option 2: KMKT-KSGS-KANE-KFCM-KLVN-KMKT

***Note**: The instructor will assign a cross-country flight with* one leg a total straight-line distance of more than 50 nautical miles from the original point of departure and one **segment** will be more than 50 nautical miles if option 1 or 2 are not selected.
Segment means airport to airport

REVIEW:

- Preflight Preparation
- Preflight Procedures
- Weather Briefing

PREFLIGHT PROCEDURES

- Use of checklist
- Preflight inspection
- Cockpit organization
- Passenger Briefing
- Taxi Briefing
- Review hot spots & runway incursions avoidance
- Positive change of controls
- Run up procedures

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal or Crosswind Takeoff(s) and Climbs(s)
- Normal or Crosswind Approach(s) and Landing(s)

NAVIGATION & CROSS COUNTRY PROCEDURES

- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications
- Enroute Procedures and Clearances
- Situational Awareness
- Aeronautical Decision Making
- Single Pilot Resource Management

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

LOG ONLY IF PERFORMED IN ACTUAL OR SIMULATED INSTRUMENT CONDITIONS
LESSON REQUIRES 3 APPROACHES EACH AT A DIFFERENT AIRPORT ONE MUST BE PARTIAL PANEL AND ONE MUST BE CIRCLE TO LAND..

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Instructor Choice
- Type/Location _____
- Circle or Straight in to Land
- 1 of above as Partial Panel Approach
- Type/Location _____
- Holding:_____

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

- Filing an IFR Flight Plan with electronic application
- Air Traffic Control Clearance
- Clearance Copying and Readback
- Departure Procedures
- Use of Radar
- Voice Communications
- Enroute Procedures and Clearances
- Missed Approach Procedures

EMERGENCY OPERATIONS

- Partial Panel - Vacuum Failure if applicable
- EFIS Failure if equipped

COMPLETION STANDARDS:

- This lesson is complete when the student has conducted the assigned IFR cross country flights and completed each task for review. During flight all procedures must be within FAA acceptable tolerances for IFR operations at all times.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT: LESSON 15

3.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
3.0 HOURS SOLO CROSS COUNTRY
0.3 HOURS PRE/POST

This Lesson must be flown with ATC clearances for all legs and may be in VFR or IFR conditions or any combination. May be flown day or night or any combination of conditions. Student must be IFR current to fly this lesson.

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their Aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be introduced or reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- Student needs to be on an IFR flight plan with ATC clearance throughout the flight. There is no minimum requirement for approaches at each location. If MVFR or IFR conditions exist then logging of all holds and approaches that are ATC assigned and in actual IFR conditions is required. Instructor shall include the Scenario given in the lesson remarks

Note: *The instructor will assign a solo cross country with a straight line distance of more than 50 nm from original point of departure and one* ***segment*** *will be more than 50 nautical miles.*

Segment means airport to airport

REVIEW:

- Preflight Preparation
- Preflight Procedures
- Weather Briefing

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

TAKEOFFS, LANDINGS

- Normal and/or Crosswind Takeoff and Climbs
- Normal and /or Crosswind Approach and Landing

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

If actual IFR conditions exist only log what is performed. No min requirement

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Student Choice
- Type/Location _____
- Circle or Straight in to Land
- Visual Approach Location(s)_____
- Holding_____

COMPLETION STANDARDS:

This lesson is complete when the student has conducted the assigned IFR cross country and completed the assigned tasks on this lesson.

FLIGHT: LESSON 16

3.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
3.0 HOURS SOLO CROSS COUNTRY
0.3 HOURS PRE/POST

This Lesson must be flown with ATC clearances for all legs and may be in VFR or IFR conditions or any combination. May be flown day or night or any combination of conditions. Student must be IFR current to fly this lesson.

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their Aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be introduced or reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- Student needs to be on an IFR flight plan with ATC clearance throughout the flight. There is no minimum requirement for approaches at each location. If MVFR or IFR conditions exist then logging of all holds and approaches that are ATC assigned and in actual IFR conditions is required. Instructor shall include the Scenario given in the lesson remarks

Note: *The instructor will assign a solo cross country with a straight line distance of more than 50 nm from original point of departure and one* ***segment*** *will be more than 50 nautical miles.*

Segment means airport to airport

REVIEW:

- Preflight Preparation
- Preflight Procedures
- Weather Briefing

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

TAKEOFFS, LANDINGS

- Normal and/or Crosswind Takeoff and Climbs
- Normal and /or Crosswind Approach and Landing

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

If actual IFR conditions exist only log what is performed. No min requirement

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Student Choice
- Type/Location _____
- Circle or Straight in to Land
- Visual Approach Location(s)_____
- Holding_____

COMPLETION STANDARDS:

- This lesson is complete when the student has conducted the assigned IFR cross country and completed the assigned tasks on the lesson.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT: LESSON 17

4.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
4 HOURS SOLO CROSS COUNTRY
0.3 PRE/POST

This lesson and the next can either be flown individually or combined with Lessons 18 into one cross country Student must file IFR flight plan and fly on an ATC issued instrument clearance, visual approaches are acceptable in VFR conditions. This lesson may be flown in day or night conditions Student must be instrument current for this lesson.

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- Student needs to be on an IFR flight plan with ATC clearance throughout the flight. There is no minimum requirement for approaches at each location. If MVFR or IFR conditions exist then logging of all holds and approaches, while in IMC conditions, that are ATC assigned is required.
- Instructor shall include the Scenario given in the lesson remarks

Instructor will create a scenario for that student to fly *of at least 300 nm total distance; one leg will be more than 250 nm straight line distances with 3 points.*

- *One airport on the cross country flight will be tower controlled*
- *Student must land at each airport a minimum of 1 time and there must be 2 different airports different from the original point of departure..*

- Student needs to be on an IFR flight plan with ATC clearance throughout the flight. There is no minimum requirement for approaches at each location. If MVFR or IFR conditions exist then logging of all holds and approaches that are assigned is required.
  - *All flight time will be logged as cross country flight time on this lesson.*

***Segment**: Is defined as airport to airport*

Example: MKT-GRI – 275 nm; GRI-JYR – 31 NM; JYR-OLU 36 nm total = 342 nm (4 hours) land at OLU at civil twilight

Example added if combined with lesson 18: OLU-FSD for 3 night landings control tower 131 nm
FSD-MKT – 128 =259 nm (2.5 hours night)

REVIEW:

- Preflight Preparation
- Preflight Procedures
- Weather Briefing

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

CROSS COUNTRY PROCEDURES

- Cross-Country Flight Planning
- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications
- Enroute Procedures and Clearances

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

If actual IFR conditions exist only log what is performed. No min requirement

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Student Choice
- Type/Location _____
- Circle or Straight in to Land
- Visual Approach Location(s)_____
- Holding_____

COMPLETION STANDARDS:

- This lesson is complete when the student has conducted the assigned IFR cross country and completed the assigned tasks on the lesson.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 18

2.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
2.0 HOURS SOLO CROSS COUNTRY GIVEN
2.0 **NIGHT**
0.3 HOURS PRE/POST

This lesson 18 can either be flown individually or combined with Lesson 17 into one cross country Student must file IFR flight plan and fly on an ATC issued instrument clearance, visual approaches are acceptable in VFR conditions. Student must be instrument current for this lesson.

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- Student needs to be on an IFR flight plan with ATC clearance throughout the flight. There is no minimum requirement for approaches at each location. If MVFR or IFR conditions exist then logging of all holds and approaches, while in IMC conditions, that are ATC assigned is required.
- Instructor shall include the Scenario given in the lesson remarks

Note: *The instructor will assign a solo cross country with a straight line distance of more than 50 nm from original point of departure and one* ***segment*** *will be more than 50 nautical miles.*

Example added if combined with lesson 17: OLU-FSD for 3 night landings control tower 131 nm
FSD-MKT – 128 =259 nm (2.5 hours night)

Segment means airport to airport

- Instructor will create a scenario for student to fly to a location on a cross country flight

REVIEW:

- Preflight Preparation
- Preflight Procedures
- Weather Briefing

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

CROSS COUNTRY PROCEDURES

- Cross-Country Flight Planning
- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications
- Enroute Procedures and Clearances

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES *If actual IFR conditions exist only log what is performed. No min requirement*

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Student Choice
- Type/Location _____
- Circle or Straight in to Land
- Visual Approach Location(s)_____
- Holding_____

COMPLETION STANDARDS:

- The student should demonstrate an increase in proficiency and confidence in cross country navigation at night.
- This lesson is complete when the student has conducted the assigned IFR cross country and completed the assigned tasks on the lesson.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 19

3.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
3.0 HOURS DUAL CROSS COUNTRY
2.0 HOURS INSTRUMENT INSTRUCTION
.5 PRE/POST

LESSON OBJECTIVES:

- The instructor will develop a flight scenario that will allow the student to further their aeronautical decision making skills.
- With each flight scenario the instructor will develop a plan of action that allows each element of the lesson to be introduced or reviewed as the lesson requires. The plan should allow for items to occur as they would in the course of a normal flight.
- The scenario and plan of action should be executed to challenge the student to further their piloting abilities as well as Risk Management skills.
- In this lesson the student will demonstrate additional proficiency in flying in the IFR environment and following and executing IFR procedures. This flight will be conducted on an IFR flight plan with an IFR clearance. If the flight scenario requires student to start VFR and with changing weather need to pick up an IFR enroute or convert from IFR to VFR that is acceptable instructor shall include in lesson remarks with the Scenario given.
- This dual flight the student will file and fly at least three instrument flights, practicing instrument navigation and approaches to each airport in VFR conditions, simulated and/or actual IFR conditions.

Note: **All on IFR flight Plan**

The instructor will assign an instrument cross-country flight of at least 3 legs, one that consists of a total straight line distance of more than 100 nautical miles from the original point of departure and at least three ***segments*** *of more than 50 nm.*

Segment means airport to airport

REVIEW:

- Preflight Preparation
- Preflight Procedures
- IFR Cross-Country Flight Planning
- Weather Briefing
- Alternate Airports

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

Preflight Procedures:

- Use of checklist
- Preflight inspection
- Cockpit organization
- Passenger Briefing
- Taxi Briefing
- Review hot spots & runway incursions avoidance
- Positive change of controls
- Run up procedures

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

- Climb Gradients – Aircrafts Ability to meet required climb gradient
- Departure Procedures and Clearances
- Holding Procedures
- Precision Approach
- Non-precision Approach
- Missed Approach procedures

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES

LOG ONLY IF PERFORMED IN ACTUAL OR SIMULATED CONDITIONS NEED 1 PERCISION AND 1 NON PERCISION WITH 1 HOLD.

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Instructor Choice
- Type/Location _____
- Circle or Straight in to Land
- 1 of above as Partial Panel Approach
- Type/Location _____

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal and/or Crosswind Takeoff(s) and Climbs(s)
- Normal and/or Crosswind Approach(es) and Landing(s)

NAVIGATION & CROSS COUNTRY PROCEDURES

- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications
- Situational Awareness
- Aeronautical Decision Making
- Single Pilot Resource Management

COMPLETION STANDARDS:

- During the flight, the student should maintain altitude ±100 feet, headings ±10°, airspeed ±10 knots, bank angle ±5°. The student will demonstrate the ability to plan multiple instrument flights, perform instrument approaches, emergency operations and communications while operating in a busier instrument environment. The student will use the normal approach airspeed within ± 5 kts, crosswind correction and land within 300' of the designated landing point.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

STAGE CHECK – FLIGHT 20

STAGE CHECK 1

2.0 HOURS TOTAL FLIGHT TIME
OF WHICH:
2.0 HOURS DUAL GIVEN
1.0 HOUR INSTRUMENT INSTRUCTION
1.0 HOURS PRE/POST

LESSON OBJECTIVES:

- The Chief Flight Instructor, Assistant Chief Flight Instructor or designated Check Flight Instructor will provide the student with a flight scenario that will be an IFR cross country that is planned for 2 legs with the furthest point a minimum of 300NM from home base. The flight maybe Day or Night conditions when flown.
- Plan of action should have a diversion airport more than 15 NM from point of departure where all necessary items may be evaluated.
- Student will file the appropriate flight plan and execute the flight in accordance with the current PTS standards for skills used to conduct the flight.
- Evaluate the Students ability to perform Instrument IFR procedures including approaches and holding procedures.

Preflight Preparation:

- Risk Management
- Controlled Flight into Terrain Awareness
- Aeronautical Decision Making
- Certificates and Documents
- Airworthiness Requirements
- Weather Information
- Cross-Country Flight Planning
- National Airspace System
- Aeromedical Factors

Preflight Procedures:

- Use of checklist
- Preflight inspection
- Cockpit organization
- Passenger Briefing
- Taxi Briefing
- Review hot spots & runway incursions avoidance
- Positive change of controls
- Run up procedures

PREFLIGHT WEATHER INFORMATION

- Preflight Orientation and Preparation
- Electronic Briefing and filing of Flight Plan

Present to Instructor a Summary briefing to include:

- METAR, TAF, FA, Surface Analysis Chart,
- Radar Summary Significant Weather Prognostic Chart, Winds and Temperature Aloft, Convective Outlook Chart, AWOS, ASOS, and ATIS Reports NOTAMS, SIGMETS, AIRMETS
- Relate to Risk Management for this flight

TAKEOFFS, LANDINGS

- Normal and/or Crosswind Takeoff and Climbs
- Normal and /or Crosswind Approach and Landing

INSTRUMENT DEPARTURE AND ARRIVAL PROCEDURES *STAGE CHECK PILOT NEEDS TO TEST ON A MINIMUM OF 2 APPROACHES WITH 1 HOLD. Only 1 landing required*

- Non-precision Approach
- Type/Location _____
- Circle or Straight-in to Land
- Precision Approach
- Type/Location_____
- Circle or Straight-in to Land
- Instructor Choice
- Type/Location _____
- Circle or Straight in to Land
- 1 of above as Partial Panel Approach
- Type/Location _____
- Hold: _____

EMERGENCY OPERATIONS

- Systems and Equipment Malfunctions
- Emergency Approach and Landing Procedures
- Emergency Equipment and Survival Gear
- Partial Panel - Vacuum Failure (IR)

INSTRUMENT DEPARTURE, ARRIVAL and CROSS COUNTRY PROCEDURES (IR) ***Pick 2 approaches & 1 hold***

- ATC Clearance Copying and Readback
- Departure Procedures
- Use of Radar
- Enroute Procedures and Clearances
- Radio Communications

NAVIGATION & CROSS COUNTRY PROCEDURES

- Air Traffic Control Clearance
- Clearance Copying and Read Back
- Departure Procedures
- Use of Radar
- Voice Communications
- Situational Awareness
- Aeronautical Decision Making
- Single Pilot Resource Management

COMPLETION STANDARDS:

- The Student will execute the flight scenario as given by the Check pilot. The student will perform all required tasks in this lesson Instrument Practical test standards.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

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STAGE II

COMMERCIAL MANEUVERS AIRPLANE SINGLE ENGINE LAND

20 HOURS TOTAL TRAINING:

STAGE OBJECTIVES

In this stage, the student will be introduced to the Commercial flight maneuvers in a single-engine airplane.

STAGE COMPLETION STANDARDS

At the completion of this stage, the student will perform all the single-engine airplane commercial maneuvers and procedures at a proficiency level that meets or exceeds the criteria set forth in the single-engine land section of the current FAA Commercial Pilot Practical Test Standards.

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PRE & POST GROUND LESSON 21

1.0 HOURS TOTAL GROUND INSTRUCTION

LESSON REFERENCES:

Airplane Flying Handbook

- Chapter 6 Ground Ref Maneuvers
- Chapter 8 Approaches & Landings
- Chapter 9 Performance Maneuvers
- AIM Chapter 7 Safety of Flight
- POH Limitations Section

LESSON OBJECTIVES:

- Introduce the Student to Single Engine Commercial maneuvers as presented in the Airplane Flying Handbook as well as the way they are described for completion standards in the Commercial PTS. This lesson will also include a review of the aircraft POH operating limitations section and how these limitations shall be applied while practicing the Commercial Maneuvers.
- Review traffic pattern operations and landing techniques
- Review Commercial PTS and the discussion on Smooth handling of the aircraft.

ACADEMIC CONTENT:

REVIEW:

- Aircraft Limitations
- Normal vs Utility category
- Review of Aircraft operating limitations
- Maneuvering Speed
- Va Range For Aircraft Used, Effects of Weight on Va

COMMERCIAL AIRCRAFT MANEUVERS

- Slow Flight
- Power On Stall
- Power Off Stall
- Accelerated Stall
- Elevator Trim Stall
- Cross Control Stall
- Steep Turns (50°)
- Spin Awareness and Spins
- Short Field Takeoff and Landing
- Soft Field Takeoff and Landing

Review Traffic pattern entries and procedures Distance for Downwind keeping pattern close and use of aim point on final.

AIRPORT OPERATIONS

- Traffic Pattern Entry
- Judging Distance for Downwind
- Judging When to Turn Base
- Stabilized Final and how that effects touchdown
- Emphasis on collision avoidance in the pattern
- Visual Scanning and Collision Avoidance
- Traffic Patterns (wind correction & drift)
- Radio Communications
- Runway Incursion & Airport Signs and Markings

COMPLETION STANDARDS:

- The student will be able to talk through each commercial maneuver and be able to apply the desired flight maneuver to any limitations for performing that maneuver. The student shall be able to explain Va and how it is applied to any flight situation.

STUDY ASSIGNMENT:

Review of Ground Lesson X
PA 28 Aircraft Questionnaire

FLIGHT LESSON 22

1.5 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.5 HOURS DUAL GIVEN
.5 HOURS PRE/POST

LESSON OBJECTIVES:

- The student will practice maneuvers to Private Pilot standards and will then review Take offs and landings to private pilot standards. The instructor will seek out every opportunity to practice cross wind landings when conditions are favorable to do so.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures

SLOW FLIGHT AND STALLS

- Maneuvering during slow flight
- Power-Off Stall
- Power-On Stall
- Spin Awareness (Do not Spin Aircraft)

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal Take offs and Landings
- Cross Wind Take offs and Landings
- Soft Field Takeoffs and Landings
- Short Field Takeoffs and Landings
- Go-Around procedures and reasons

AIRPORT OPERATIONS

- Traffic Pattern Entry
- Judging Distance for Downwind
- Judging When to Turn Base
- Stabilized Final and how that effects touchdown
- Emphasis on collision avoidance in the pattern
- Visual Scanning and Collision Avoidance
- Traffic Patterns (wind correction & drift)
- Radio Communications
- Runway incursion & Airport Signs and Markings

COMPLETION STANDARDS:

- Air work maneuvers shall meet private pilot completion standards.
- Landings shall meet the private pilot completion standards.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 23

1.5 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.5 HOURS DUAL GIVEN
0.5 HOURS PRE/POST

LESSON OBJECTIVES:

- The student will review and perform the maneuvers and procedures listed below.
- The student will be introduced to slip to landing, elevator trim stalls, secondary stall, accelerated stalls and steep power turns.
- The instructor will seek out every opportunity to practice cross wind landings when conditions are favorable to do so.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures
- Risk Management

AIRPORT OPERATIONS

- Traffic Patterns
- Radio Communications
- Visual Scanning and Collision Avoidance
- Runway Incursions & Airport Signs and Markings

SLOW FLIGHT AND STALLS

- Maneuvering during slow flight
- Power-Off Stall
- Power-On Stall

Glides

- Precision Glides
- Gliding Turns
- Off Airport Landings (simulated)

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal Take offs and Landings
- Cross Wind Take offs and Landings
- Soft Field Takeoffs and Landings
- Short Field Takeoffs and Landings
- Go-Around procedures and reasons

INTRODUCE:

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Power Off 180 Landings
- Slip to landing

PERFORMANCE MANEUVER

- Steep Power Turns (50° Bank)

COMPLETION STANDARDS:

- During the flight, the student should maintain altitude ±100 feet, headings ±10°, airspeed ±10 knots, bank angle ±5°.
- Short Field Takeoff and Landings and Power Off 180° Accuracy Approaches & Landings should be conducted safely, landing smoothly after desired point of landing and holding airspeed + 5 – 0 knots of desired speed. Experiencing a stable final approach.
- Airport operations will be evaluated on the adherence to proper procedures, operating techniques, and executing the briefed procedures with minimal instructor assistance
- The newly introduced maneuvers and procedures will be evaluated on the adherence to proper procedures, operating techniques, coordination, smoothness, and understanding of standard operating procedures.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

PRE & POST GROUND LESSON 24

1.0 HOURS TOTAL GROUND INSTRUCTION

LESSON REFERENCES:

Airplane Flying Handbook

- Chapter 6 Ground Ref Maneuvers
- Chapter 8 Approaches & Landings
- Chapter 9 Performance Maneuvers
- AIM Chapter 7 Safety of Flight
- POH Limitations Section

LESSON OBJECTIVES:

- Continue to analyze the techniques necessary to successfully perform the commercial maneuvers that have been practiced so far.
- Review traffic pattern operations and landing techniques
- Review Commercial PTS and the discussion on Smooth handling of the aircraft.

ACADEMIC CONTENT:

REVIEW:

- Aircraft Limitations
- Normal vs Utility category
- Review of Aircraft operating limitations (normal vs utility category)
- Maneuvering Speed

AIRPORT OPERATIONS

- Traffic Pattern Entry
- Judging Distance for Downwind
- Judging When to Turn Base
- Stabilized Final and how that effects touchdown
- Emphasis on collision avoidance in the pattern
- Traffic Patterns (wind correction & drift)

INTRODUCE:

- Chandelle
- Steep Spiral
- Lazy 8's
- Eights-On-Pylon

COMPLETION STANDARDS:

- The student will have a good understanding of the landing techniques necessary to accomplish the landings to a commercial PTS standard
- Student will have a text book understanding of how to perform the commercial maneuvers introduced in this lesson..

STUDY ASSIGNMENT:

Review of all reading material from this Ground Lesson

FLIGHT LESSON 25

1.5 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.5 HOURS DUAL GIVEN
0.5 HOURS PRE/POST

LESSON OBJECTIVES:

- The student will review and perform the maneuvers and procedures listed below.
- The student will continue to work on developing skills to complete the review maneuvers smoothly and accurately.
- The instructor will seek out every opportunity to practice cross wind landings when conditions are favorable to do so.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures
- Risk Management

AIRPORT OPERATIONS

- Traffic Patterns
- Radio Communications
- Visual Scanning and Collision Avoidance
- Runway Incursions & Airport Signs and Markings

SLOW FLIGHT AND STALLS

- Maneuvering during slow flight
- Power-Off Stall
- Power-On Stall

PERFORMANCE MANEUVER

- Steep Power Turns (50° Bank)

Glides

- Precision Glides
- Gliding Turns
- Off Airport Landings (simulated)

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal Take offs and Landings
- Cross Wind Take offs and Landings
- Soft Field Takeoffs and Landings
- Short Field Takeoffs and Landings
- Go-Around procedures and reasons

INTRODUCE:

ADDITIONAL PERFORMANCE MANEUVERS

- Chandelle
- Steep Spiral
- Lazy 8's

GROUND MANEUVERS

- Eights-On-Pylon

ADDITIONAL STALLS:

- Elevator Trim Stalls
- Accelerated Stalls
- Secondary Stall

COMPLETION STANDARDS:

- During the flight, the student should maintain altitude ±100 feet, headings ±10°, airspeed ±10 knots, bank angle ±5°.
- Short Field Takeoff and Landings and Power Off 180° Accuracy Approaches & Landings should be conducted safely, landing smoothly after desired point of landing within 200 ft. and holding airspeed + 5 – 0 knots of desired speed. Experiencing a stable final approach.
- Airport operations will be evaluated on the adherence to proper procedures, operating techniques, and executing the briefed procedures with minimal instructor assistance
- The newly introduced maneuvers and procedures will be evaluated on the adherence to proper procedures, operating techniques, coordination, smoothness, and understanding of standard operating procedures.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 26

1.6 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.6 HOURS SOLO

LESSON OBJECTIVES:

- The student will review some of the Commercial maneuvers previously learned to gain additional proficiency.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures

SLOW FLIGHT AND STALLS

- Maneuvering during slow flight
- Power-Off Stall
- Power-On Stall

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Power-Off 180° Accuracy Approaches & Landings
- Slip to Landing
- Short Field Takeoff and Landing
- Soft Field Takeoff and Landing

AIRPORT OPERATIONS

- Traffic Patterns
- Visual Scanning and Collision Avoidance
- Radio Communications

COMPLETION STANDARDS:

- Landing approaches should have a stabilized final with airspeed +5 -0
- Power Off 180° Accuracy Approaches & Landings should be conducted safely, landing within 200 feet of desired point of landing and holding airspeed within + 5 - 0 knots and maximum bank angles of less than 30 degree in the pattern. Experiencing a stable final approach.
- Short Field Landings should touch down within 100 feet of the desired point.
- Steep turns should be ± 100 ft ± 10 knots, Slow flight should be ± 50 ft on entry and exit. All maneuvers should be executed procedurally correct.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 27

1.5 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.5 HOURS DUAL GIVEN
0.5 HOURS PRE/POST

LESSON OBJECTIVES:

- The student will review the listed Commercial maneuvers previously learned to gain additional proficiency.
- The Student will continue to develop coordination skills performing maneuvers smoothly and accurately.
- The instructor will seek out every opportunity to practice cross wind landings when conditions are favorable to do so.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures

EMERGENCY PROCEDURES

Instructor provided scenario's:

- Engine fire while starting
- Engine fire in flight
- Emergency Decent
- Oil pressure high or low (seek Closest Apt)
- Engine failure off airport simulated landing

Note: *Do not go below 500 ft AGL*

SLOW FLIGHT AND STALLS

- Maneuvering during slow flight
- Power-Off Stall
- Power-On Stall

PERFORMANCE MANEUVER

- Steep Power Turns (50° Bank)

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal Take offs and Landings
- Cross Wind Take offs and Landings
- Soft Field Takeoffs and Landings
- Short Field Takeoffs and Landings
- 180° Power Off Landings
- Go-Around procedures and reasons

AIRPORT OPERATIONS

- Traffic Patterns
- Visual Scanning and Collision Avoidance
- Radio Communications
- Airport Signs and Markings
- Managing a Busy Traffic Pattern
- Emphasis on Pattern Safety

COMPLETION STANDARDS:

- Landing approaches should have a stabilized final with airspeed +5 -0
- During the flight, the student should maintain altitude ±100 feet, headings ±10°, airspeed ±10 knots, bank angle ±5°.
- Power Off 180° Accuracy Approaches & Landings should be conducted safely, landing within 200 feet of desired point of landing and holding airspeed within ±5 knots and maximum bank angles of less than 30 degree in the pattern.
- Short Field Landings should touch down within 100 feet of the desired point. Experiencing a stabilized final approach.
- Airport operations will be evaluated on the adherence to proper procedures, operating techniques, and understanding of standard operating procedures.
- Cross Wind Landings shall be completed maintaining center line with proper inputs applied after landing, student shall follow through until aircraft comes to a complete stop.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

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FLIGHT LESSON 28

1.5 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.5 HOURS DUAL GIVEN
0.5 HOURS PRE/POST

LESSON OBJECTIVES:

- The student will review the listed Commercial maneuvers previously learned to gain additional proficiency.
- The instructor will seek out every opportunity to practice cross wind landings when conditions are favorable to do so.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures

SLOW FLIGHT AND STALLS

- Maneuvering during slow flight
- Power-Off Stall with bank
- Power-On Stall with bank
- Accelerated Stall

PERFORMANCE MANEUVER

- Chandelles
- Lazy 8's
- Steep Turns
- Steep Spiral

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal Take offs and Landings
- Cross Wind Take offs and Landings
- Soft Field Takeoffs and Landings
- Short Field Takeoffs and Landings
- Go-Around procedures and reasons
- Power off 180 Landings

GROUND REFERENCE MANUVERS

- Eights on Pylons

AIRPORT OPERATIONS

- Traffic Patterns
- Visual Scanning and Collision Avoidance
- Radio Communications
- Airport Signs and Markings
- Managing a Busy Traffic Pattern
- Emphasis on Pattern Safety

COMPLETION STANDARDS:

- Landing approaches should have a stabilized final with airspeed +5 -0
- During the flight, the student should maintain altitude ±100 feet, headings ±10°, airspeed ±10 knots, bank angle ±5°.
- Power Off 180° Accuracy Approaches & Landings should be conducted safely, landing within 200 feet of desired point of landing and holding airspeed within +5 -0 knots and maximum bank angles of less than 30 degree in the pattern.
- Short Field Landings should touch down within 100 feet of the desired point.
- Airport operations will be evaluated on the adherence to proper procedures, operating techniques, and understanding of standard operating procedures.
- Cross Wind Landings shall be completed maintaining center line with proper inputs applied after landing, student shall follow through until aircraft comes to a complete stop.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 29

1.6 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.6 HOURS SOLO

LESSON OBJECTIVES:

- The student will review some of the Commercial maneuvers previously learned to gain additional proficiency.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures

SLOW FLIGHT AND STALLS

- Maneuvering during slow flight
- Power-Off Stall with bank
- Power-On Stall with bank

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Power-Off 180° Accuracy Approaches & Landings
- Slip to Landing
- Short Field Takeoff and Landing
- Soft Field Takeoff and Landing

PERFORMANCE MANEUVER

- Chandelles
- Lazy 8's
- Steep Turns
- Steep Spiral

GROUND REFERENCE MANUVERS

- Eights on Pylons

AIRPORT OPERATIONS

- Traffic Patterns
- Visual Scanning and Collision Avoidance
- Radio Communications
- Airport Signs and Markings
- Managing a Busy Traffic Pattern
- Emphasis on Pattern Safety

COMPLETION STANDARDS:

- Landing approaches should have a stabilized final with airspeed +5 -0
- Power Off 180° Accuracy Approaches & Landings should be conducted safely, landing within 200 feet of desired point of landing and holding airspeed within + 5 - 0 knots and maximum bank angles of less than 30 degree in the pattern.
- Short Field Landings should touch down within 100 feet of the desired point.
- Steep turns should be $\pm$ 100 ft $\pm$ 10 knots, Slow flight should be $\pm$ 50 ft on entry and exit. All maneuvers should be executed procedurally correct.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 30

1.5 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.5 HOURS DUAL GIVEN
0.5 HOURS PRE/POST

LESSON OBJECTIVES:

- The student will review the listed Commercial landings previously learned to gain additional proficiency.
- It is recommended that the instructor break up the landing practice by going to another close by airport and have the student practice entry as well as apply all the pattern skills for judging distance on the downwind and when to turn base, establishing a stabilized standard pattern at a less familiar airport.
- The instructor will seek out every opportunity to practice cross wind landings when conditions are favorable to do so.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal Take offs and Landings
- Cross Wind Take offs and Landings
- Soft Field Takeoffs and Landings
- Short Field Takeoffs and Landings
- Go-Around procedures and reasons
- Power off 180 Landings

AIRPORT OPERATIONS

- Traffic Patterns
- Visual Scanning and Collision Avoidance
- Radio Communications
- Airport Signs and Markings
- Runway Incursions
- Managing a Busy Traffic Pattern
- Emphasis on Pattern Safety

COMPLETION STANDARDS:

- Landing approaches should have a stabilized final with airspeed +5 -0
- During the flight, the student should maintain altitude ±100 feet, headings ±10°, airspeed ±10 knots, bank angle ±5°.
- Power Off 180° Accuracy Approaches & Landings should be conducted safely, landing within 200 feet of desired point of landing and holding airspeed within +5 -0 knots and maximum bank angles of less than 30 degree in the pattern.
- Short Field Landings should touch down within 100 feet of the desired point.
- Airport operations will be evaluated on the adherence to proper procedures, operating techniques, and understanding of standard operating procedures.
- Cross Wind Landings shall be completed maintaining center line with proper inputs applied after landing, student shall follow through until aircraft comes to a complete stop.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 31

1.8 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.8 HOURS SOLO

LESSON OBJECTIVES:

- The student will review Commercial Landings while traveling to different airports, gaining experience with pattern entries and applying the skills of the traffic pattern at a less familiar airport.
- Student will travel to a least 3 different airports and perform a minimum of 1 landing per airport.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Power-Off 180° Accuracy Approaches & Landings
- Slip to Landing
- Short Field Takeoff and Landing
- Soft Field Takeoff and Landing

AIRPORT OPERATIONS

- Traffic Patterns
- Visual Scanning and Collision Avoidance
- Radio Communications
- Airport Signs and Markings
- Managing a Busy Traffic Pattern
- Emphasis on Pattern Safety

COMPLETION STANDARDS:

- Landing approaches should have a stabilized final with airspeed +5 -0
- Power Off 180° Accuracy Approaches & Landings should be conducted safely, landing within 200 feet of desired point of landing and holding airspeed within + 5 - 0 knots and maximum bank angles of less than 30 degree in the pattern.
- Short Field Landings should touch down within 100 feet of the desired point.
- Steep turns should be $\pm$ 100 ft $\pm$ 10 knots, Slow flight should be $\pm$ 50 ft on entry and exit. All maneuvers should be executed procedurally correct.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 32

1.5 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.5 HOURS DUAL GIVEN
0.5 HOURS PRE/POST

LESSON OBJECTIVES:

- The student will review the listed Commercial maneuvers previously learned to gain additional proficiency.
- The instructor will seek out every opportunity to practice cross wind landings when conditions are favorable to do so.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures

SLOW FLIGHT AND STALLS

- Maneuvering during slow flight
- Power-Off Stall with & without bank
- Power-On Stall with & without bank
- Accelerated Stall

EMERGENCY PROCEDURES

Instructor provided scenario's:

- Engine fire while starting
- Engine fire in flight
- Emergency Decent
- Oil pressure high or low (seek Closest Apt)
- Engine failure off airport simulated landing

  Note: *Do not go below 500 ft AGL*

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal Take offs and Landings
- Cross Wind Take offs and Landings
- Soft Field Takeoffs and Landings
- Short Field Takeoffs and Landings
- Go-Around procedures and reasons
- Power off 180 Landings

PERFORMANCE MANEUVER

- Chandelles
- Lazy 8's
- Steep Turns
- Steep Spiral

GROUND REFERENCE MANUVERS

- Eights on Pylons

AIRPORT OPERATIONS

- Traffic Patterns
- Visual Scanning and Collision Avoidance
- Radio Communications
- Airport Signs and Markings
- Managing a Busy Traffic Pattern
- Emphasis on Pattern Safety

COMPLETION STANDARDS:

- This Lesson is complete when student demonstrates the specified maneuvers that meets the current commercial single engine land FAA practical test standards.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 33

1.5 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.5 HOURS DUAL GIVEN
0.5 HOURS PRE/POST

LESSON OBJECTIVES:

- The student will review the listed Commercial landings previously learned to gain additional proficiency.
- It is recommended that the instructor break up the landing practice by going to another close by airport and have the student practice entry as well as apply all the pattern skills for judging distance on the downwind and when to turn base, establishing a stabilized standard pattern at a less familiar airport.
- The instructor will seek out every opportunity to practice cross wind landings when conditions are favorable to do so.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal Take offs and Landings
- Cross Wind Take offs and Landings
- Soft Field Takeoffs and Landings
- Short Field Takeoffs and Landings
- Go-Around procedures and reasons
- Power off 180 Landings

AIRPORT OPERATIONS

- Traffic Patterns
- Visual Scanning and Collision Avoidance
- Radio Communications
- Airport Signs and Markings
- Managing a Busy Traffic Pattern
- Emphasis on Pattern Safety

COMPLETION STANDARDS:

- This Lesson is complete when student demonstrates landing performance that meets the current commercial single engine land FAA practical test standards.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

FLIGHT LESSON 34

1.5 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.5 HOURS DUAL GIVEN
0.5 HOURS PRE/POST

LESSON OBJECTIVES:

- The student will review the listed Commercial maneuvers & landings in preparation of the Stage Check.
- The instructor will seek out every opportunity to practice cross wind landings when conditions are favorable to do so.

REVIEW:

- Preflight Orientation and Preparation
- Preflight Procedures
- Safety-Related Operations and Procedures

SLOW FLIGHT AND STALLS

- Maneuvering during slow flight
- Power-Off Stall with & without bank
- Power-On Stall with & without bank
- Accelerated Stall

EMERGENCY PROCEDURES

Instructor provided scenario's:

- Engine fire while starting
- Engine fire in flight
- Emergency Decent
- Oil pressure high or low (seek Closest Apt)
- Engine failure off airport simulated landing
  Note: *Do not go below 500 ft AGL*

TAKEOFFS, LANDINGS AND GO-AROUNDS

- Normal Take offs and Landings
- Cross Wind Take offs and Landings
- Soft Field Takeoffs and Landings
- Short Field Takeoffs and Landings
- Go-Around procedures and reasons
- Power off 180 Landings

PERFORMANCE MANEUVER

- Chandelles
- Lazy 8's
- Steep Turns
- Steep Spiral

GROUND REFERENCE MANUVERS

- Eights on Pylons

AIRPORT OPERATIONS

- Traffic Patterns
- Visual Scanning and Collision Avoidance
- Radio Communications
- Airport Signs and Markings
- Managing a Busy Traffic Pattern
- Emphasis on Pattern Safety

COMPLETION STANDARDS:

- This Lesson is complete when student demonstrates performance that meets the current commercial single engine land FAA practical test standards.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

PRE & POST GROUND LESSON 35

1.0 HOURS TOTAL GROUND INSTRUCTION

LESSON REFERENCES:

Airplane Flying Handbook

- Commercial Pilot Practical Test Standard Guide
- FAR Part 91
- Aircraft POH
- Aircraft Maintenance Logs

LESSON OBJECTIVES:

- This ground lesson is to prepare for the upcoming stage check. The student will use all training material and reference materials used to date and shall cross reference with the current Practical Test Standard Guide in use at the time..

REVIEW:

PRE FLIGHT PREPERATION

- Airworthiness and registration certificates.
- Operating limitations, placards, instrument markings, and POH/AFM.
- Weight and balance data and equipment list.

Airworthiness Requirements

- Required instruments and equipment for day/night VFR.
- procedures and limitations for determining
- airworthiness of the airplane with inoperative
- instruments and equipment with and without an MEL.
- requirements and procedures for obtaining a special
- flight permit.
- Airworthiness directives.
- Compliance records.
- Maintenance/inspection requirements.
- Appropriate record keeping.

Operation of Systems

- Primary flight controls and trim.
- Power plant and propeller.
- Landing gear.
- Fuel, oil, and hydraulic.
- Electrical.
- Avionics.
- Pitot-static, vacuum/pressure, and associated flight instruments.

Performance and Limitations

- Exhibits satisfactory knowledge of the elements related to performance and limitations by explaining the use of charts, tables, and data to determine performance and the adverse effects of exceeding limitations.
- Computes weight and balance. Determines the computed weight and center of gravity are within the airplane's operating limitations and if the weight and center of gravity will remain within limits during all phases of flight.
- Demonstrates use of the appropriate manufacturer's performance charts, tables, and data. Describes the effects of atmospheric conditions on the airplane's performance.

COMPLETION STANDARDS:

- Student will show an understanding of all the required items covered on this lesson and the ability to discuss them to the current Commercial Practical Test Standard Requirement.

STAGE CHECK – FLIGHT 36

STAGE CHECK 2

1.5 HOURS TOTAL FLIGHT TIME
OF WHICH:
1.5 HOURS DUAL GIVEN
1.0 HOURS PRE/POST

LESSON OBJECTIVES:

- The Chief Flight Instructor, the Assistant Chief Flight Instructor or a designated Check Flight Instructor will evaluate the student's proficiency in the proper execution of the maneuvers and procedures listed below.

PRE FLIGHT PREPERATION

- Airworthiness and registration certificates.
- Operating limitations, placards, instrument markings, and POH/AFM.
- Weight and balance data and equipment list.

Airworthiness Requirements

- Required instruments and equipment for day/night VFR.
- procedures and limitations for determining
- airworthiness of the airplane with inoperative
- instruments and equipment with and without an MEL.
- requirements and procedures for obtaining a special
- flight permit.
- Airworthiness directives.
- Compliance records.
- Maintenance/inspection requirements.
- Appropriate record keeping.

Operation of Systems

- Primary flight controls and trim.
- Power plant and propeller.
- Landing gear.
- Fuel, oil, and hydraulic.
- Electrical.
- Avionics.
- Pitot-static, vacuum/pressure, and associated flight instruments.

Performance and Limitations

- Exhibits satisfactory knowledge of the elements related to performance and limitations by explaining the use of charts, tables, and data to determine performance and the adverse effects of exceeding limitations.
- Computes weight and balance. Determines the computed weight and center of gravity are within the airplane's operating limitations and if the weight and center of gravity will remain within limits during all phases of flight.
- Demonstrates use of the appropriate manufacturer's performance charts, tables, and data. Describes the effects of atmospheric conditions on the airplane's performance.

PREFLIGHT PROCEDURES

- Preflight Inspection (ASEL and ASE
- Cockpit Management
- Engine Starting
- Taxiing
- Runway Incursion Avoidance
- Before Takeoff Check

AIRPORT AND SEAPLANE BASE OPERATIONS

- Radio Communications and ATC Light Signals
- Traffic Patterns
- Airport Runway, and Taxiway Signs,
- Markings, and Lighting

PERFORMANCE MANEUVERS

- Steep Turns
- Steep Spiral
- Chandelles
- Lazy Eights

GROUND REFERENCE MANEUVER

- Eights on Pylons

SLOW FLIGHT AND STALLS

- Maneuvering During Slow Flight
- Power-Off Stalls
- Power-On Stalls
- Accelerated Stalls
- Spin Awareness

EMERGENCY OPERATIONS

- Emergency Descents
- Emergency Approach and Landing (Simulated)
- Systems and Equipment Malfunctions
- Emergency Equipment and Survival Gear

TAKEOFFS, LANDINGS, AND GO-AROUNDS

- Normal and Crosswind Takeoff and
- Normal and Crosswind Approach and
- Soft-Field Takeoff and Climb
- Soft-Field Approach and Landing
- Short-Field Takeoff
- Short-Field Approach Landing
- Power-Off 180° Accuracy Approach and Landing
- Go-Around/Rejected Landing

POSTFLIGHT PROCEDURES

- After Landing, Parking, and Securing

COMPLETION STANDARDS:

- This Lesson is complete when student demonstrates performance that meets the current commercial single engine land FAA practical test standards.

POST FLIGHT DISCUSSION AND PREVIEW OF NEXT LESSON

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IS

INTENTIONALLY

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FLIGHT LESSONS COMPLETION RECORD

☐ RECORD OF FLIGHT TIME:

	TOTAL TIME	SOLO	DUAL	ME COMPLEX	Single Engine	Flight Trainer	FLIGHT CONDITIONS				LANDINGS	
							X-C	DAY	NIGHT	INST.	DAY	NIGHT
TOTAL TIME												
TOTAL TIME REQUIREMENTS	**120.0**	**42**	****78**	**38**	**70**	***12.00**	**#65**	**2.0**	**13.0**	**31**		**10**

Total time must be >= 120 hours at the end of the final stage check. ***Total Time = ME complex + SE + FT***

***** Flight trainer may be reduced to zero hours provided an aircraft is substituted in the place of the flight trainer.

**Dual may be reduced to no less than 64.0 hours provided solo flight time increases the same amount so DUAL + SOLO = at least 120 hours.

Cross country flight time may be reduced to no less than 44 hours provided "specific course requirements" are met below.

☐ SPECIFIC COURSE REQUIREMENTS:

- Cross-Country Flight Requirements:
  14 CFR Part 141, Appendix D, Section 4(2)(iii) and (iv) and 14 CFR Part 141, Appendix D, Section 5 (2)

FLIGHT LESSON	DATE	ROUTE OF FLIGHT	Distance	REQUIREMENTS	Instructor's Signature
46				Dual Cross-country flight of at least 2-hour duration, a total straight line distance of 100 nautical miles from the original point of departure, and occurring in **day** conditions.	
47				Dual Cross-country flight of at least 2-hour duration, a total straight line distance of 100 nautical miles from the original point of departure, and occurring in **night** conditions.	
55				Student performing duties of PIC Cross-country flight with landings at a minimum of three points and one **segment** distance of the flight consisting of a straight line distance of at least 250 nautical miles.	

- Student performing duties of PIC under the supervision of an authorized instructor on board:
  14 CFR Part 141, Appendix D, Section 5(b)

FLIGHT LESSON	DATE	ROUTE OF FLIGHT		PERFORM DUTIES OF PIC ME	FLIGHT CONDITIONS			LANDINGS		Instructor's Signature
		from	*to*		X-C	DAY	NIGHT	DAY	NIGHT	
55										
56										
57										
			TOTAL TIME							
			TOTAL TIME REQUIREMENTS	**10.0**	**5.0**	**-**	**5.0**	**-**	**10**	

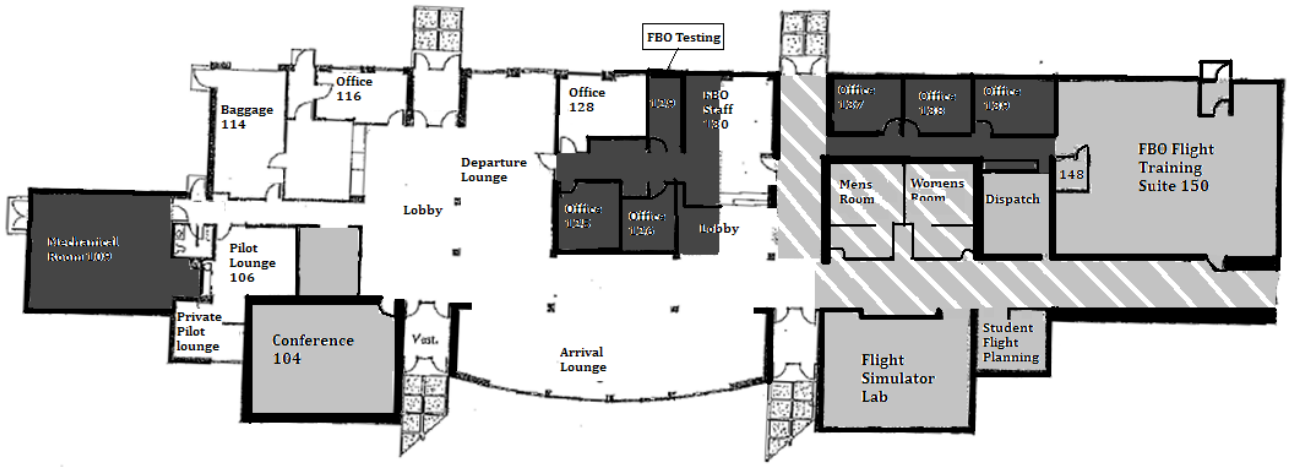
END OF COURSE STAGE CHECK OR FAA Practical Test

Date	Examiner	Result (1st Attempt)

Remarks: _____

APPENDIX A

DIAGRAM - 1



Legend

- City of Mankato and public Area
- North Star Aviation Area
- Shared Area
- Flight Training Area

0 25 50

Area configurations:

The Corridors, washrooms, and the mechanical room divided up equally between the City of Mankato and North Star Aviation. Each space was calculated by three area configuration options.

-area calculated from outside of exterior wall to outside of exterior wall.

-area calculated from outside of exterior wall to center line of interior wall.

-area calculated from center line of interior wall to center line of interior wall.

City of Mankato and public space including shared Areas with North Star Aviation =	8,703 Sq Ft
North Star Aviation areas including Areas shared with City of Mankato and the public =	6,597 Sq Ft
Total building area =	15,300 Sq Ft

DIAGRAM -2

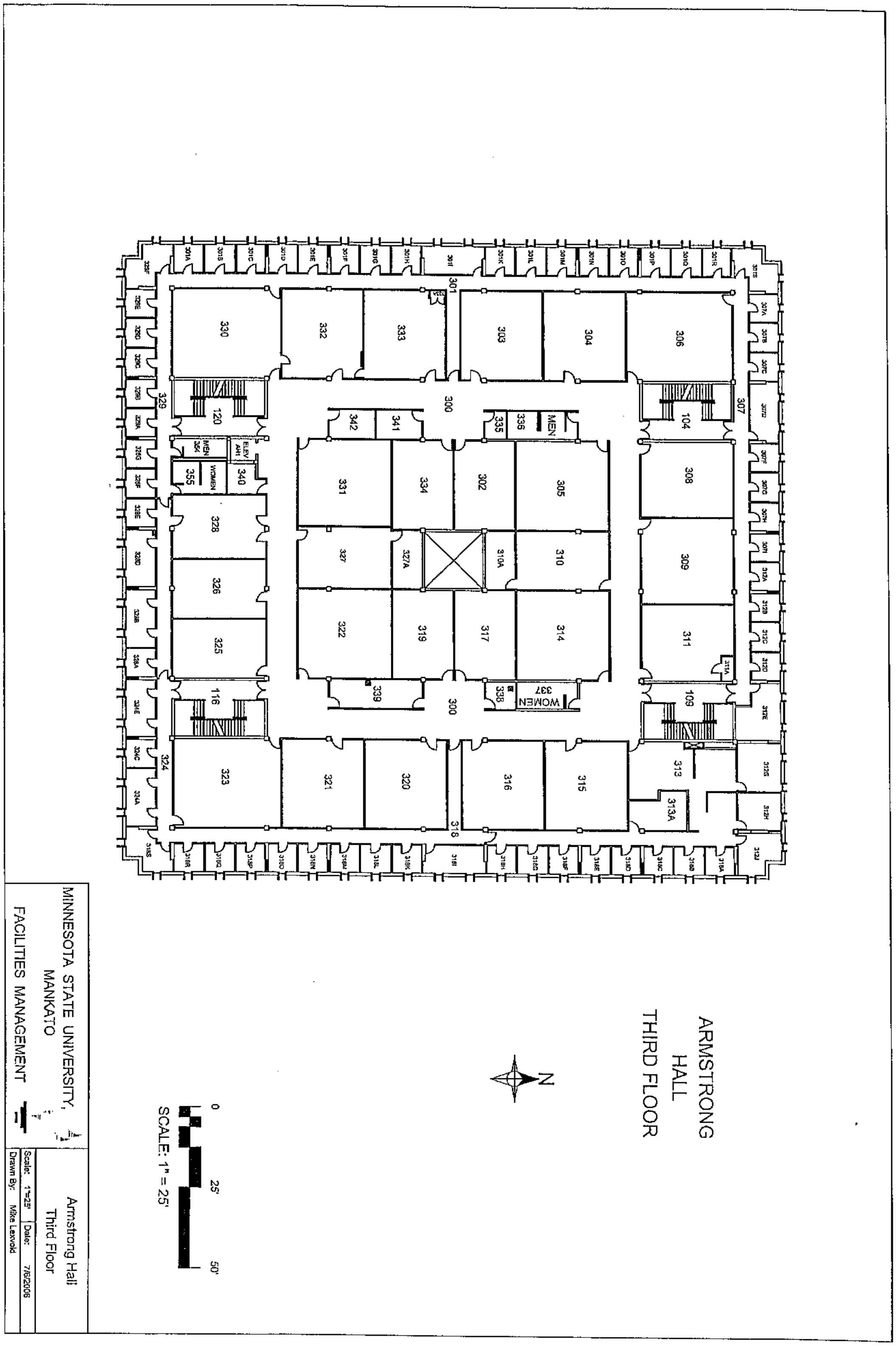


Diagram 2
ARMSTRONG HALL THIRD FLOOR
SCALE: 1" = 25'
MINNESOTA STATE UNIVERSITY, MANKATO
FACILITIES MANAGEMENT
Armstrong Hall Third Floor
Scale: 1"=25'
Date: 7/6/2006

DIAGRAM –3

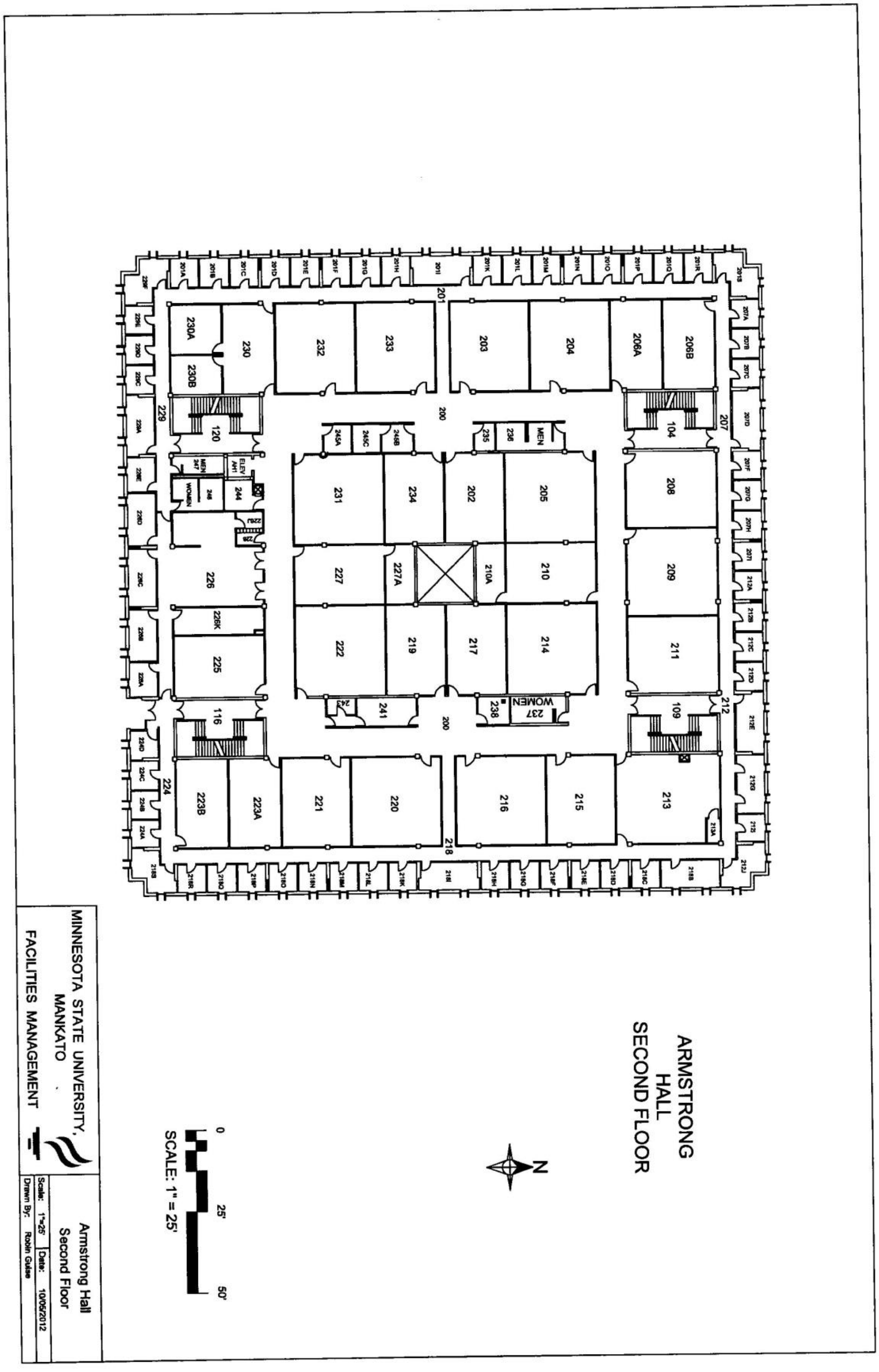

ARMSTRONG
HALL
SECOND FLOOR
N
0
25'
50'
SCALE: 1" = 25'
MINNESOTA STATE UNIVERSITY,
MANKATO
FACILITIES MANAGEMENT
Armstrong Hall
Second Floor
Scale: 1"=25'
Date: 10/05/2012
Drawn By:

DIAGRAM –4

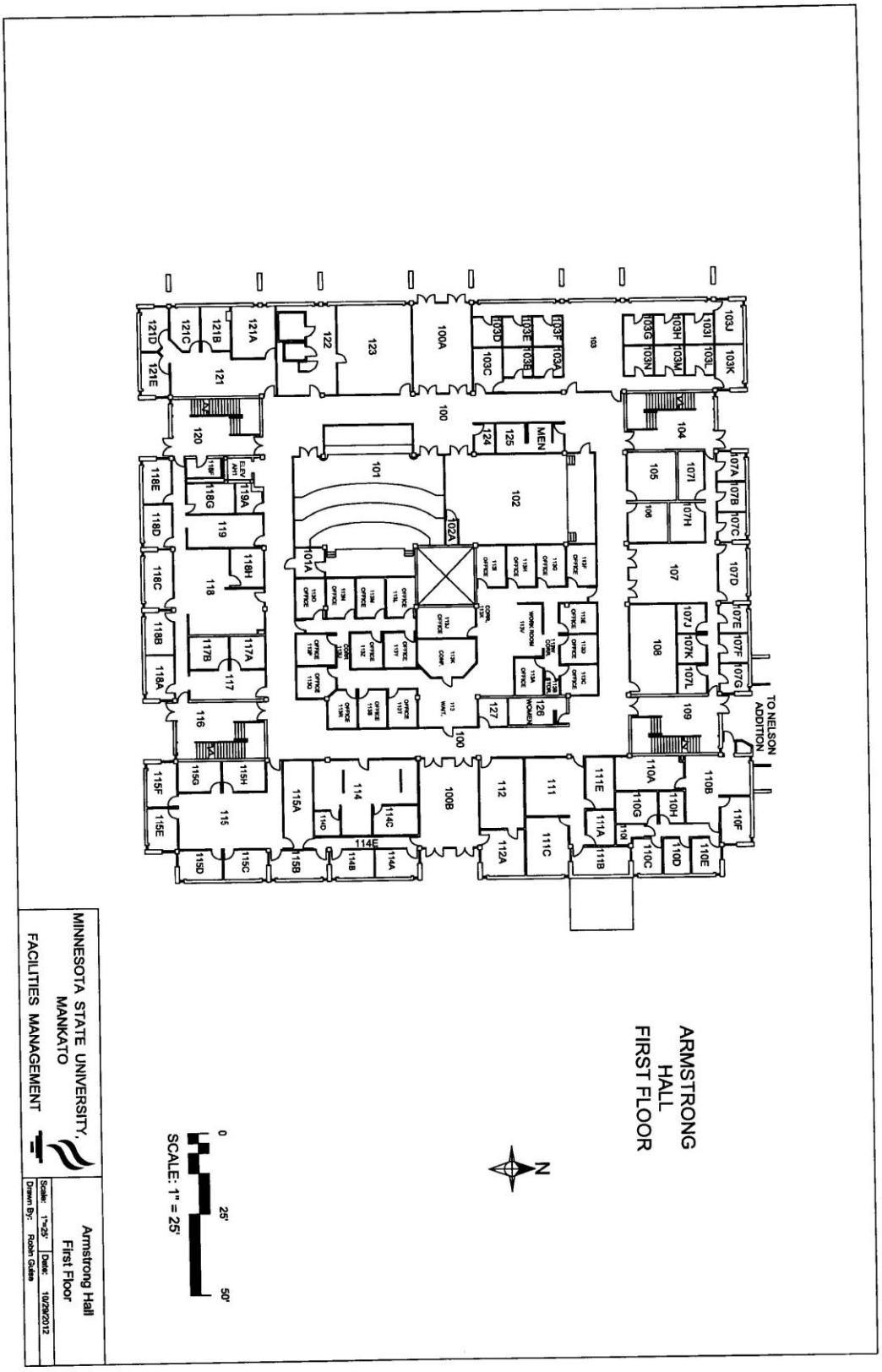

ARMSTRONG
HALL
FIRST FLOOR
TO NELSON ADDITION
MEN
WOMEN
N
SCALE: 1" = 25'
0
25'
50'
MINNESOTA STATE UNIVERSITY, MANKATO
FACILITIES MANAGEMENT
Armstrong Hall
First Floor
Scale: 1"=25'
Date: 10/29/2012
Drawn By: Robin Gulbe

DIAGRAM – 5

U.S. Department
of Transportation
Federal Aviation
Administration

800 Independence Ave., SW
Washington DC 20591

DEC 1 9 2014

Mr. Jerome N. Gregoire
Redbird Flight Simulations
2301 East St. Elmo Rd., Suite 100
Austin, Texas 78744

Dear Mr. Gregoire:

The Federal Aviation Administration (FAA) last qualified and approved your airplane LD, SD, FMX, and MCX device as an Advanced Aviation Training Device (AATD) on February 14, 2013 in accordance with Title 14 Code of Federal Regulations (14 CFR) section (§) 61.4(c). This training device was found to meet the criteria for an AATD as described in FAA Advisory Circular AC 61-136.

Starting January 1, 2015, the FAA requires all Letters of Authorization (LOA) to contain the correct training allowances to remain valid. Based on the previous approval and review of the qualification and approval guide dated February 7, 2013, the FAA has determined that this device continues to meet the current standards for approval. The Redbird model LD, SD, FMX, and MCX is authorized for use in satisfying the following sections of Title 14 of the Code of Federal Regulations parts 61 and 141:

Redbird Model LD, SD, FMX, MCX version 4.4
Airplane Single and Multi-Engine Land
Advanced Aviation Training Device (AATD)

- § 61.51(b)(3) – Logbook entries;
- § 61.51 (h) – Logging training time;
- § 61.57(c) – Instrument experience;
- § 61.57(c)(4)(iii) – Instrument experience;
- § 61.57(c)(5)(ii) – Instrument experience;
- § 61.57(d)(1)(ii) – Instrument proficiency check, per the Instrument PTS;
- § 61.65(i) – Instrument rating;
- § 61.109(k)(1) – Private Pilot Certificate Aeronautical experience: up to 2.5 hours;
- § 61.129(i)(1)(i) – Commercial Pilot Certificate: up to 50 hours;
- § 61.159(a)(3)(i) – Airline Transport Pilot Certificate: up to 25 hours; and
- § 141.41(b) – Approved for use under the part 141 appendices as follows:
  - *Appendix B* – Up to 15% toward the total Private Pilot flight training time requirements;

- *Appendix C* – As allowed under 4(b) toward the total instrument flight training time requirements;
- *Appendix D* – Up to 20% toward the total Commercial Pilot flight training time requirements;
- *Appendix E* – Up to 25% toward the total Airline Transport Pilot flight training time requirements;
- *Appendix F* – Up to 5% toward the total Flight Instructor flight training time requirements;
- *Appendix G* – Up to 5% toward the total Flight Instructor instrument flight training time requirements;
- *Appendix I, Private Pilot Airplane Single Engine or Multiengine Class Rating Course* – Up to 3 hours toward the flight training time requirements;
- *Appendix I, Commercial Pilot Airplane Single Engine or Multiengine Class Rating Course* – Up to 11 hours toward the required flight training time *requirements;*
- *Appendix I, Airline Transport Pilot Airplane Multiengine Class Rating Course* – Up to 6.25 hours toward the flight training time; and
- *Appendix M, Combined Private Pilot Certification and Instrument Rating* – Up to 25% toward the total flight training time requirements

Note: Training or experience requirements such as cross country, night, solo, takeoffs and landings, or the 3 hours of training within 2 calendar months of the practical test must be accomplished in an aircraft. Private Pilot Airplane applicants must also complete the requirement for 3 hours of control and maneuvering of an airplane solely by reference to instruments specified in §61.109 in an airplane. Additionally, practical tests cannot be conducted in an AATD.

Exemption Notice: This device qualifies for the exemption from 14 CFR section 61.65(i) and part 141 Appendix C under the terms and conditions described in the FAA Notice of Policy Change for the Use of FAA Approved Training Devices in the Federal Register (Docket No.: FAA-2013-0809). This exemption allows pilots applying for an instrument rating to credit up 20 hours of time obtained in this device toward the aeronautical experience requirements in § 61.65(d)(2). In addition, this exemption allows training providers with a training course outline approved under part 141 Appendix C, to continue to train under that program with up to a 40% credit of the training time requirement obtained in this device. This exemption will expire as noted in the Federal Register policy notice.

This approval is contingent upon the following:

1) This aviation training device must continue to maintain its performance and function without degradation. The minimum instrument requirements specified under 14 CFR part 91, § 91.205 for day visual flights rules (VFR) and instrument flight rules (IFR) must be functional during the training session;

2) Only the configurations that are in the FAA approved Qualification and Approval Guide are utilized during training;

3) A copy of this authorization and approval letter must be readily available in a location near the device when in use. Additionally, a copy of this authorization must be provided to the person using the above credits for pilot certification or ratings;

4) An authorized instructor must provide and certify the above instructional use;

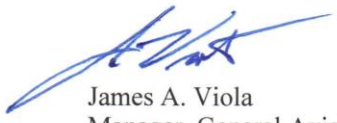
5) Any changes or modifications to this aviation training device which have not been reviewed, evaluated, and approved by AFS-800 will terminate this letter of approval; and

6) The FAA reserves the right to revoke this authorization at any time if the Administrator determines that this training device is used contrary to FAA regulation, guidance, or safety.

This approval is valid for sixty (60) calendar months from the date of this letter and supersedes any previous approvals for this training device. Renewal requests should be made prior to the expiration (90 days in advance) by letter to AFS-800 and the above contingencies (1) through (6) must remain valid. At the time of application AFS-800 will conduct (at a minimum) a review of the QAG, to verify compliance with the current AC 61-136 for their approval and use, before a new Letter of Authorization (LOA) can be provided.

This authorization expires on 11/30/2019

Sincerely,



James A. Viola
Manager, General Aviation and Commercial Division
Flight Standards Service

DIAGRAM – 6 Enrollment Certificate

This is to certify that

_____

is enrolled in the Federal Aviation Administration approved ***Commercial Pilot Airplane Multi-Engine Land*** conducted by North Star Aviation Inc.

_____ X_____

Date of Enrollment Chief Flight Instructor

Revision: Original

DIAGRAM – 7 GRADUATION CERTIFICATE

DEPARTMENT OF AVIATION
MINNESOTA STATE UNIVERSITY, MANKATO

NORTH STAR AVIATION

Commercial Pilot Airplane Multi Engine Land Graduation Certificate

I certify that the above named candidate has successfully completed all the Federal Aviation Administration stage checks, tests, course requirements and has completed the cross country training specified in FAR 141 Appendix D, Paragraph 4 (2) and cross country training while performing the duties of the pilot in command in a multi-engine airplane with an authorized instructor on board specified in FAR 141 Appendix D, Paragraph 5 (b) (2). I certify that North Star Aviation Inc. has trained the individual in accordance with our approved Flight Training School Syllabus for the Commercial Pilot Airplane Multi Engine Land course and I certify this information to be true and correct.

_____
Chief Flight Instructor

NUTS521L
Flight School Certificate

_____
Date of Graduation

DIAGRAM - 8

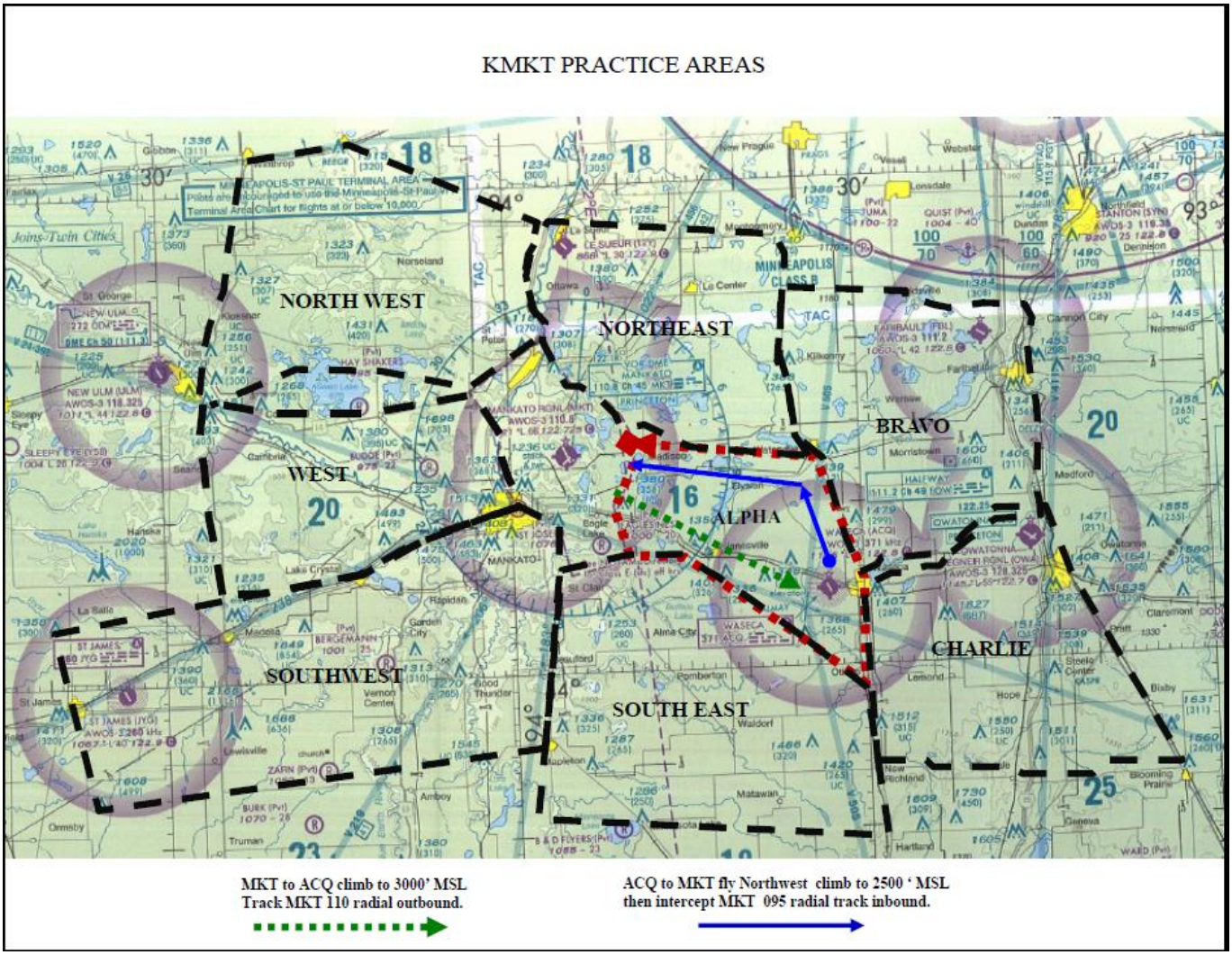
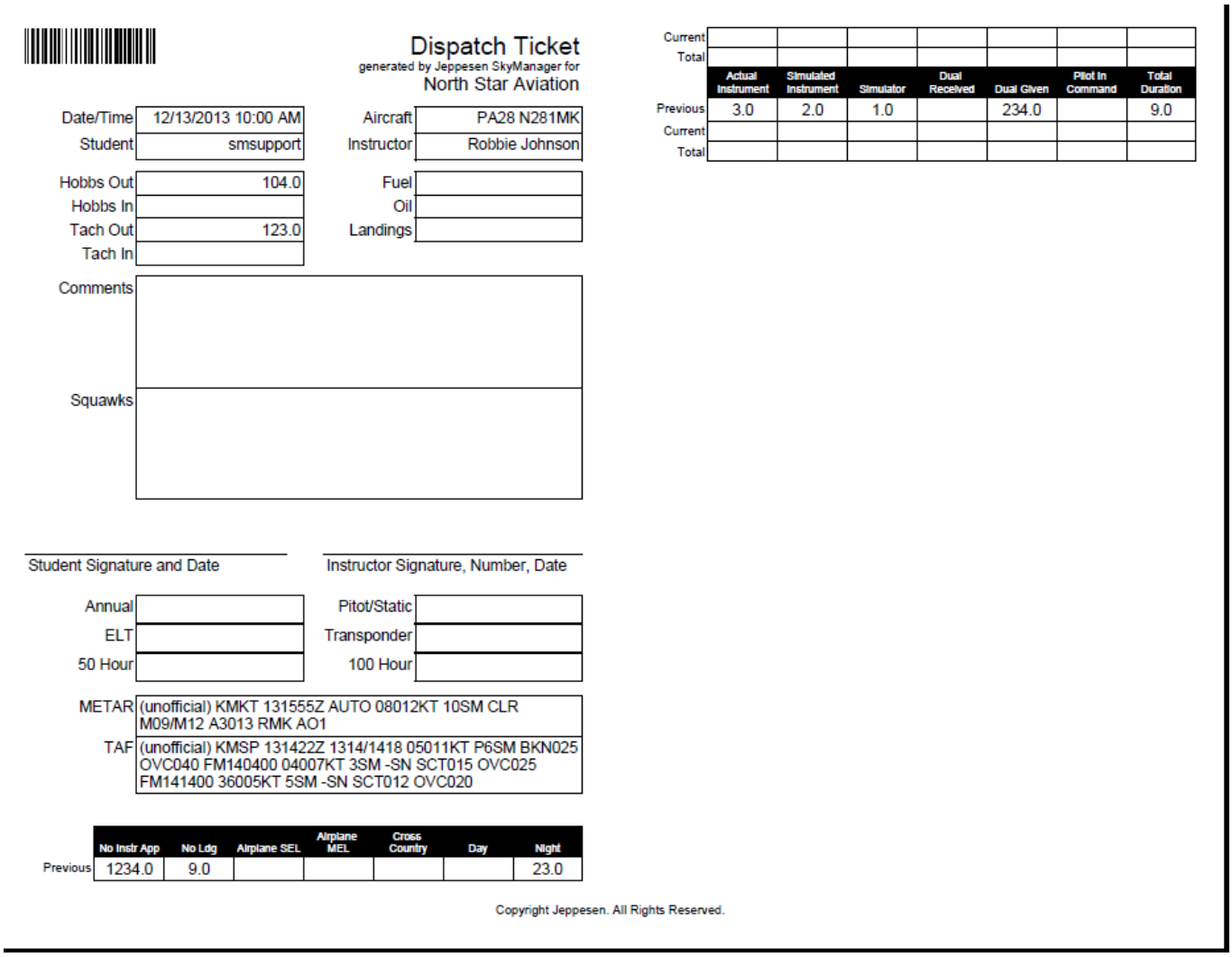

KMKT PRACTICE AREAS
NORTH WEST
NORTHEAST
BRAVO
WEST
ALPHA
CHARLIE
SOUTHWEST
SOUTH EAST
MKT to ACQ climb to 3000' MSL
Track MKT 110 radial outbound.
ACQ to MKT fly Northwest climb to 2500 ' MSL
then intercept MKT 095 radial track inbound.

DIAGRAM – 9 Sample Dispatch Release



Dispatch Ticket
generated by Jeppesen SkyManager for
North Star Aviation

Date/Time	12/13/2013 10:00 AM	Aircraft	PA28 N281MK
Student	smsupport	Instructor	Robbie Johnson
Hobbs Out	104.0	Fuel	
Hobbs In		Oil	
Tach Out	123.0	Landings	
Tach In			

Comments

Squawks

Student Signature and Date

Instructor Signature, Number, Date

Annual		Pitot/Static	
ELT		Transponder	
50 Hour		100 Hour	

METAR	(unofficial) KMKT 131555Z AUTO 08012KT 10SM CLR M09/M12 A3013 RMK AO1
TAF	(unofficial) KMSP 131422Z 1314/1418 05011KT P6SM BKN025 OVC040 FM140400 04007KT 3SM -SN SCT015 OVC025 FM141400 36005KT 5SM -SN SCT012 OVC020

	No Instr App	No Ldg	Airplane SEL	Airplane MEL	Cross Country	Day	Night
Previous	1234.0	9.0					23.0

	Actual Instrument	Simulated Instrument	Simulator	Dual Received	Dual Given	Pilot In Command	Total Duration
Current							
Total							
Previous	3.0	2.0	1.0		234.0		9.0
Current							
Total							