Aviation Merit Badge Workbook

Scout's Name: _____ Unit: _____
Counselor: Bob Wolin
Counselor's e-mail: _____

1. Do the following:
a. Define "aircraft." _____
_____
_____

Describe some kinds and uses of aircraft today.
Kind: Uses:
_____
_____
_____
_____

Explain the operation of a piston engine _____
_____
_____

Explain the operation of a turboprop engine. _____
_____
_____

Explain the operation of a jet engine. _____
_____
_____

b. Point out on a model airplane the forces that act on an airplane in flight.
_____
_____
_____

c. Explain how an airfoil generates lift.
_____
_____
_____

Explain how the primary control surfaces (ailerons, elevators, and rudder) affect the airplane's attitude, _____
_____
_____
_____

Explain how a propeller produces thrust.
_____
_____
_____
_____

d. Describe how the control surfaces of an airplane are used for

	Ailerons	Elevators	Rudder	Flaps
Takeoff				
Straight climb				
Level turn				
Climbing turn				
Descending turn				
Straight descent				
Landing				

e. Explain the following: the recreational pilot and the private pilot certificates;
_____
_____
_____

Explain the instrument rating.
_____
_____
_____

2. Do the following:

a. Perform a preflight inspection of a light airplane.

b. Explain the purposes and functions of these instruments found in a typical single-engine aircraft:
attitude indicator, _____
_____

heading indicator, _____
_____

altimeter, _____
_____

airspeed indicator, _____
_____

turn and bank indicator, _____
_____

vertical speed indicator, _____
_____

compass, _____
_____

navigation (GPS and VOR) _____
_____

and communication radios, _____
_____

tachometer, _____
_____

oil pressure gauge, _____
_____

and oil temperature gauge. _____
_____

3. Do the following:

Build a model FPG-9. Get others in your troop or patrol to make their own model, then organize a competition to test the precision of flight and landing of the models.

4. Do the following:
a. Visit an airport. After the visit, report on how the facilities are used,
_____
_____

how runways are numbered, _____
_____

and how runways are determined to be "active."))_____
_____

c. Attend an air show.
_____
Report on your impressions of the show.

5. Find out about three career opportunities in aviation.
_____
_____
_____

Pick one and find out the education and training
_____
_____
_____

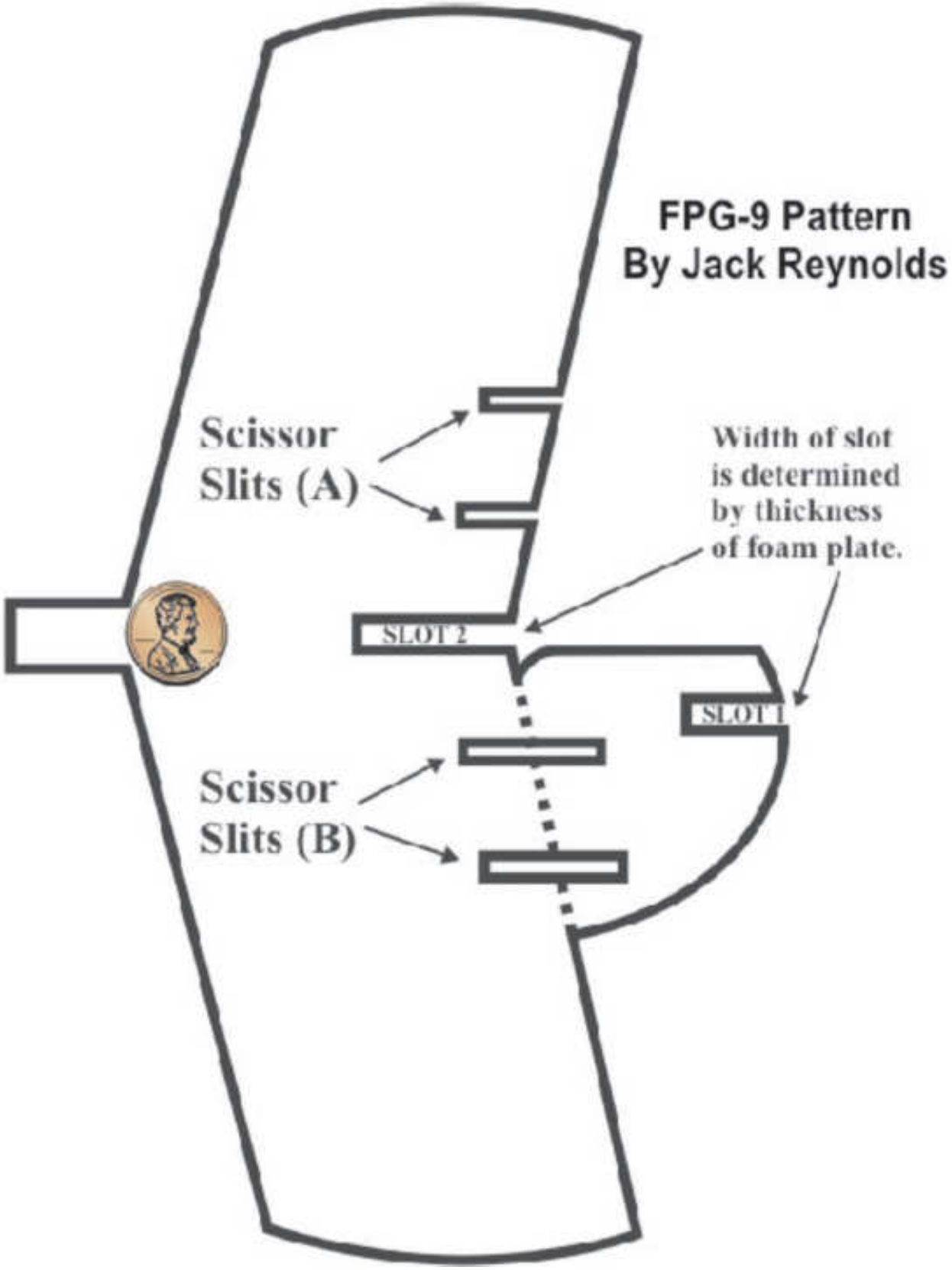
and experience required for this profession.
_____
_____
_____
_____

Discuss this with your counselor, and explain why this profession might interest you.
_____
_____
_____
_____

Merit Badge requirements completed for _____ (name)

Date: October __, 2010
Lt. Col. Robert Wolin, Civil Air Patrol

_____


FPG-9 Pattern
By Jack Reynolds
Scissor
Slits (A)
Width of slot
is determined
by thickness
of foam plate.
SLOT 2
SLOT 1
Scissor
Slits (B)