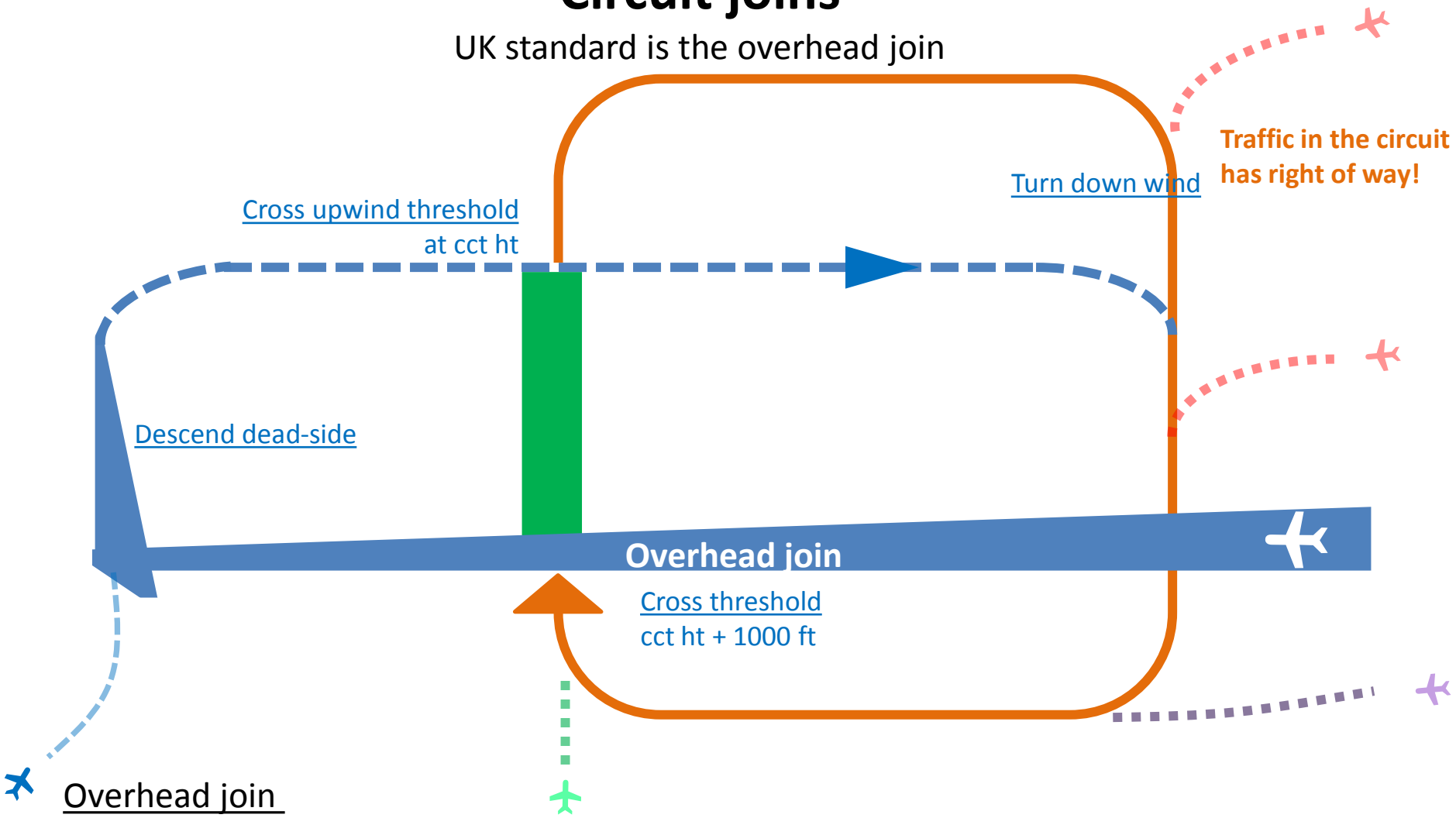
EASA PPL SYLLABUS

1. Aircraft familiarisation
2 Preparation for and after Flight
3 Air Experience
4 Effects of Controls
5 Taxying
6 Straight and Level
7 Climbing
8 Descending
9 Turning
10 Slow Flight and Stalling
11 Spinning
12 Take off and Climb out
13 Approach and Landing
14 First Solo
15 Steep turns
16 Forced landings without power
17 Precautionary Landings
18 Navigation
19 Instrument Flying

Circuit joins

UK standard is the overhead join



Overhead join

- All turns in the direction of circuit
- Good look-out for traffic
- *RT calls (if not given specific instructions)*
  - *Joining overhead*
  - *(Dead-side descent) (Cross-wind)*
  - *Turning downwind*
  - *Final*

Ex. 10A. Slow flight

AIM: To acquaint you with low speed handling characteristics & possible incipient stall / spin

T. **Poor forward View- High Oil Temp**

E. **Inadvertent Stall-Speed control**

M.: **Altitude, Lookout (especially because of high nose attitude)**

Monitor speed- Ts and Ps **To fly at 55 kts with flaps up**

W eather
A ircraft
N otams
T..E.M
S kydemon

LESSON PLAN
Pre-flight
Start-up
Taxi
Take off
To local area
AIR EXERCISE
- Demo
- Practice

Return to cct
Landing
Taxi &
Shutdown
De-brief

ENTRY (from normal cruise)	LEVEL FLIGHT	EXIT (to normal cruise)
Power 1500 rpm **A**ttitude - Pitch up to maintain height At 55kt – Increase power to 1800 rpm to maintain speed & height **T**rim Settle & adjust	Maintain – if height is lost, use elevators and power Notice: • High nose attitude • Poor forward view • Low & decreasing airspeed • Less effective controls • Stall warner may sound	**P**ower – 2300 rpm **A**ttitude – as speed builds, lower nose • to level attitude • maintain height **T**rim Settle & adjust

Emphasis on awareness – not to ignore stall symptoms only for training

Ex. 10A. Slow flight

AIM: To acquaint you with low speed handling characteristics & possible incipient stall / spin

W eather
A ircraft
N otams
T..E.M
S kydemon

T. **Poor forward View- High Oil Temp**

E. **Inadvertent Stall-Speed control**

M.: **Altitude, Lookout (especially because of high nose attitude)**

Monitor speed- Ts and Ps **To fly at 55 kts with flaps up**

LESSON PLAN

Pre-flight
Start-up
Taxi
Take off
To local area
AIR EXERCISE
- Demo
- Practice

Return to cct
Landing
Taxi & Shutdown
De-brief

TURNING	CLIMBING	DESCENDING
LOOKOUT Enter a 15deg Bank Turn  Note attitude & large rudder movement to keep a/c in balance Be prepared for stall warner due to increased loading Smaller circle described For 30 DEG AoB turns power required to maintain airspeed	**LOOKOUT** **P**ower- full  **A**ttitude- pitch up and maintain speed Small pitch change **T**rim- might run out Note- Lower rate of climb Firm rudder/elevators Less effective Ailerons	**LOOKOUT** **P**ower- reduce 1300rpm **A**ttitude small pitch down maintain airspeed **T**rim Note high nose attitude in descent Repeat as above with idle power

Repeat exercises with 20deg Flap= 50KTS

Ex. 10B. Stalling I

AIM: To recognise the symptoms and prevent but be able to recover in the event of a stall

T. **Loss of control-loose items**
E. **Over pitching**
M.: **H.A.S.E.L.L and H.E.L.L checks**

Revise symptoms of and approaching stall-

- High nose attitude
- Low airspeed
- Less effective controls
- Stall warner/Buffet (possible)

W eather
A ircraft
N otams
T..E.M
S kydemon

LESSON PLAN
Pre-flight
Start-up
Taxi
Take off
To local area
AIR EXERCISE
- Demo
- Practice

Return to cct
Landing
Taxi &
Shutdown
De-brief

ENTRY (from normal cruise)	STALLED CONDITION	RECOVERY
Power - Close Throttle  Attitude - Pitch up to maintain height	• Stall warner may sound • Low airspeed • High rate of descent • Possible Buffet • Nose will/will not drop • Possible Wing Drop	**Recovery without Power** Control Centrally Forward Stall Warner/Buffet stops Speed Increasing Note Height loss Raise nose to Level Attitude Full Power  Climb Vy Practice recover to Glide **STANDARD STALL RECOVERY** **Control Centrally Forward** **Full Power** **Rudder to prevent yaw** **Stall Warner/Buffet stops** **Speed Increasing** **Raise nose to Level Attitude** **Climb Vy**

Ex. 10B. Stalling II

AIM: To recognise and recover at first sign of an approaching stall and the stalled condition with Flap and Power in different configurations

W eather
A ircraft
N otams
T..E.M
S kydemon

T. **Loss of control-loose items**
E. **Over Pitching-Incorrect Flap retraction**
M.: **H.A.S.E.L.L and H.E.L.L checks**

LESSON PLAN
Pre-flight
Start-up
Taxi
Take off
To local area
AIR EXERCISE
- Demo
- Practice

Return to cct
Landing
Taxi &
Shutdown
De-brief

CONFIGURATION	AT FIRST SIGN OF A STALL (stall warner)	RECOVERY
BASE LEG 1700rpm-20deg Flap	As above	**S.S.RECOVERY** C.C.C.Forward Full Power Rudder –Prevent further Yaw *Raise Drag Flap Stall Warner/Buffet Stops *Roll Wings Level Speed Increasing Select Climb Attitude Positive R.O.C Retract Flaps in Stages
BASE TO FINAL 1700rpm -20deg Flap 20deg AoB	As above	
FINAL APPROACH 1700rpm – Full Flap	As above	
DEPARTURE STALL	As Above	**S.S.R**

REMINDER…

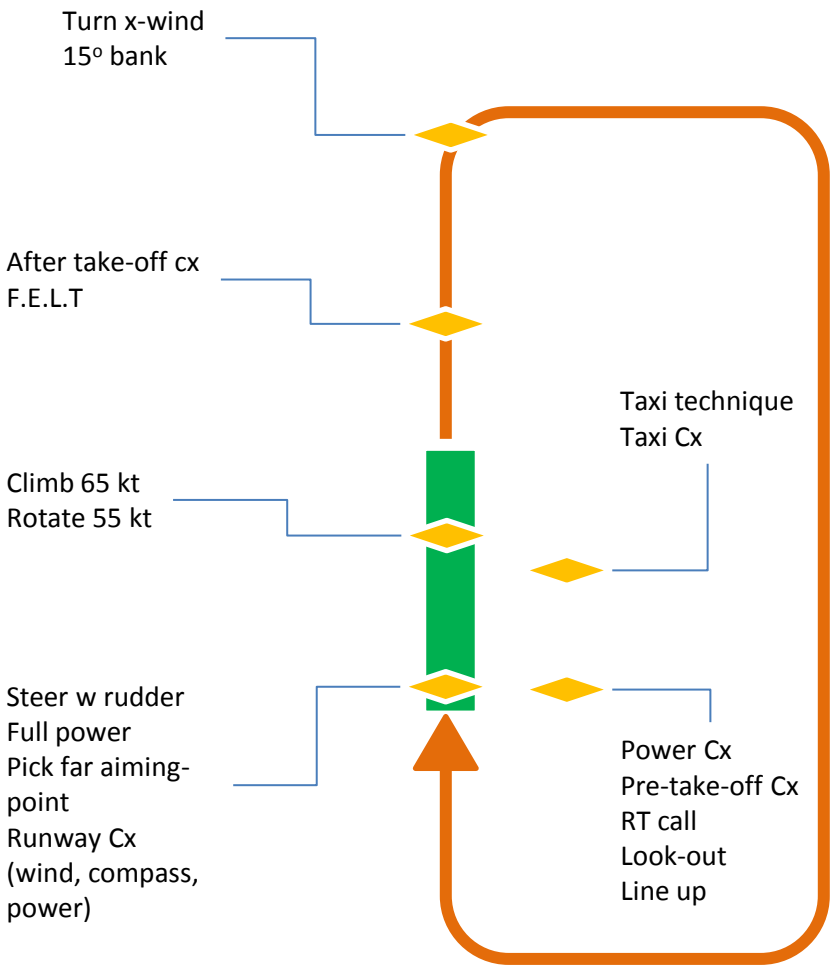
CIRCUIT DIAGRAM

Ex. 12/13. Circuits

AIM: To Learn…..to take off in the aircraft, fly the circuit & land safely

W eather
A ircraft
N otams
T..E.M
S kydemon

What have we covered in previous lessons ?



Ex. 12/13. Circuits

AIM: To Learn…..to take off in the aircraft, fly the circuit & land safely

T. **Other aircraft- departure stall-Nose wheel Landing- unstable approach**

E. **Speed Control-Distractions-**

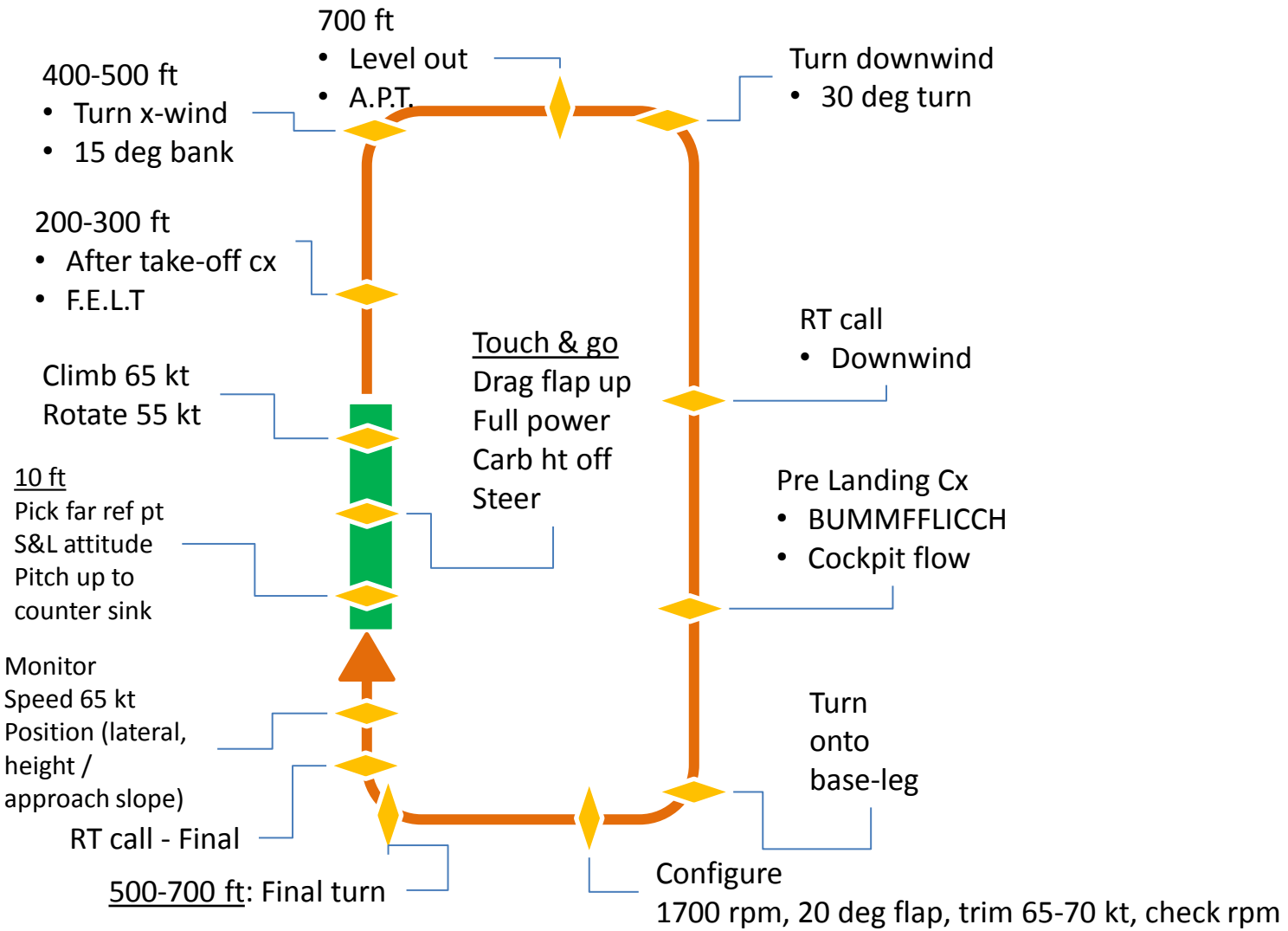
M.: **Lookout RT Checks P&T's**

W eather
A ircraft
N otams
T..E.M
S kydemon

LESSON PLAN

Pre-flight
Start-up
Taxi
Take off
AIR EXERCISE
- Demo cct & landing
- Touch & go
- Practice cct's & touch & go

Taxi & Shutdown
De-brief



Ex. 12/13. Circuits

How do we know where to turn?

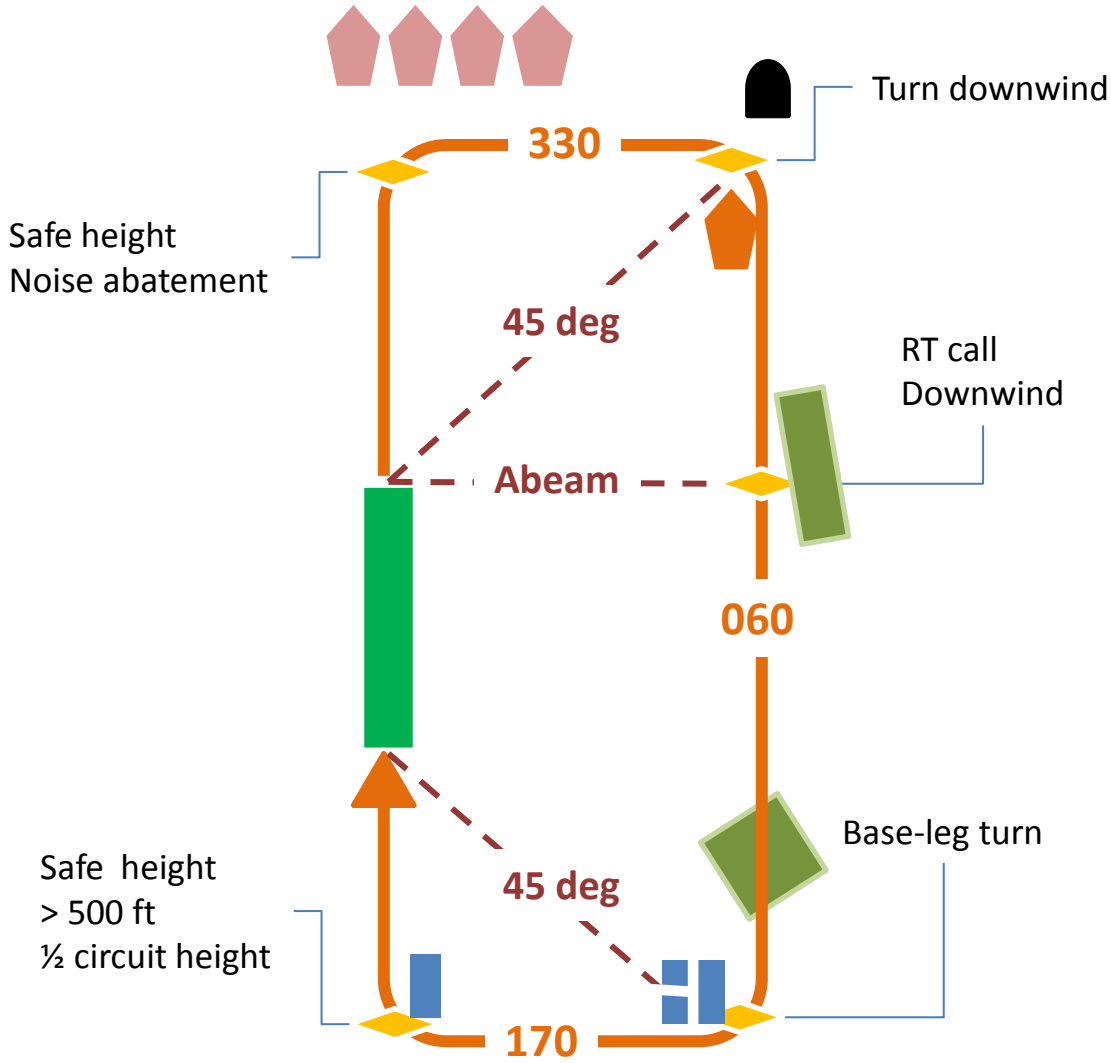
W eather
A ircraft
N otams
T..E.M
S kydemon

T. **Other aircraft- departure stall-Nose wheel Landing- unstable approach**
E. **Speed Control-Distractions-**
M.: **Lookout** **RT** **Checks** **P&T's**

TIP's .....

A good landing starts with a good circuit
- Height control
- Speed control
- Position

Anticipation
- Pitch changes
- Wind effect



General

Angles

Heading relative to runway direction

Local

Specific headings

Ground features

Ex. 12/13. Circuits

AIM: To Learn…..to take off in the aircraft, fly the circuit & land safely

And handle abnormal conditions: EFATO Go-around Bounce or Balloon

LESSON PLAN

Pre-flight

Start-up

Taxi

Take off

AIR EXERCISE

- Demo
- Practice
- Surprise

Taxi &

Shutdown

De-brief

<u>EFATO</u>

- Pitch for 65 kt
- Trim
- Pick field +/- 45 deg
- Mags & fuel off
- Flaps as needed
- Master off

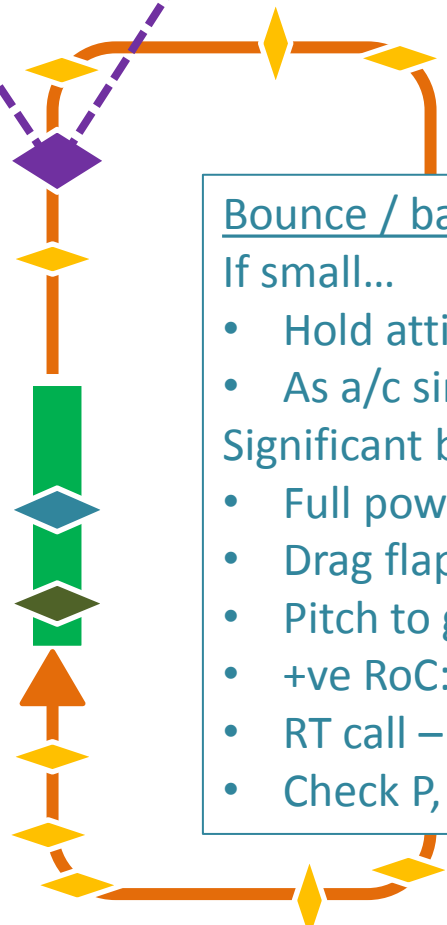
Don't turn back

No time for cause of failure Cx

Runway blocked, Wind / turbulence, Mis-judged approach (speed, height), A/c condition (e.g. under-carriage)

<u>Go around</u>

- Full power (carb heat cold)
- Drag flap – retract
- Pitch → level → gentle climb
- Turn to dead-side (why?)
- +ve RoC: retract flap in stages
- RT call – going around
- Check P, T



<u>Bounce / balloon</u>

If small…

- Hold attitude
- As a/c sinks, pitch up & flare

Significant bounce / balloon….

- Full power (carb heat cold)
- Drag flap – retract
- Pitch to gentle climb
- +ve RoC: retract flap in stages
- RT call – going around
- Check P, T

Ex. 12/13. Circuits

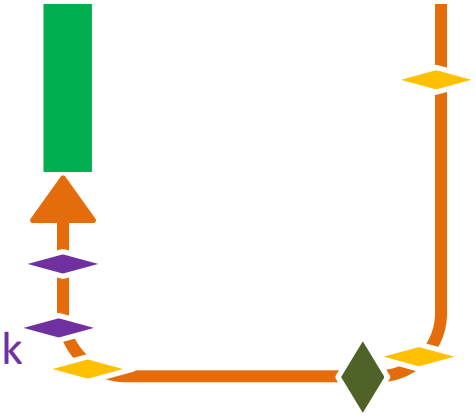
AIM: To Learn…..to take off in the aircraft, fly the circuit & land safely
…under different circumstances & conditions

W eather
A ircraft
N otams
T..E.M
S kydemon

LESSON PLAN

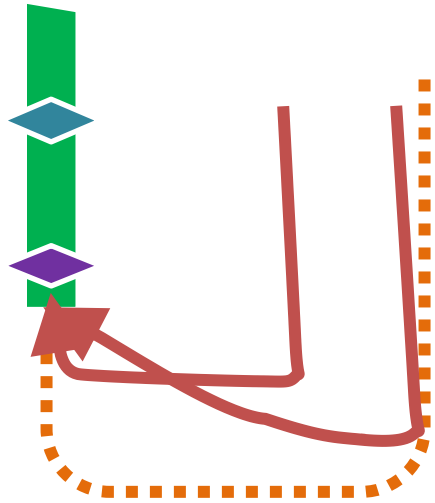
Pre-flight
Start-up
Taxi
Take off
AIR EXERCISE
- Demo cct & landing
- Touch & go
- Practice

Taxi & Shutdown
De-brief



Short field
- full flap
- 55 kt final
- Flare, c.c. fully back
- Brake after touch down

Flapless
- …… rpm on base
- Turn final 500-400 ft
- Trim for 70 kt appr & final



Glide approach
- DW or BL closer in
- Fly to threshold
- Cut power
- Pitch & trim 65 kt
- Initially, aim to land mid-field no flap
- Use flap to bring aiming point closer to threshold

Cross wind
- Adjust heading for wind
- Anticipate lower / higher GS on base leg
- Crabbed final approach
- On flare, dip into wind wing & apply opposite rudder to keep straight
- Land on into-wind wheel

The Flare

Aim – to have the aircraft decelerate to stall speed just as the main wheels touch down

How? Progressively pitching the nose up (above horizon) to counteract the aircraft's tendency to sink.

- .What can go wrong
  - A/c balloons: pitch up movement is too large / abrupt; or airspeed was too high
  - A/c lands heavily: flare is too high → judge height (practice)
  - A/c bounces: airspeed / rate of descent are too high (late or insufficient flare) → flare more (pitch up more)
    landing on all 3 wheels → attitude too flat → pitch up more
    flare is too high → judgement
    residual power → ensure throttle fully closed
    relaxing back pressure after touch down → maintain pitch up on controls
  - Land on nose wheel: not pitched up enough
  - Land on 1 main wheel: wings not level (we deliberately use this technique in x-wind)

- Getting it right
  - Correct approach speed
  - Judge flare height: peripheral vision, texture of grass visible
  - Look far ahead (end of runway reference point)
  - Pitch first to level flying attitude
  - As aircraft sinks, see & feel the sink; pitch up gradually to arrest sink → eventually stick will be fully back
  - Think "I want to keep the aircraft flying"; Don't think "I want to get the wheels down as soon as I can"
  - The nose will be pitched up above the horizon

X-wind landings present a few additional challenges….

Ex. 15. Steep Turns

AIM: To learn how to turn the a/c with 45° and 60° bank angle

W eather
A ircraft
N otams
T..E.M
S kydemon

T. **Other a/c- Spiral Descent-Increase Stall Speed-Va**

E. **Not looking out enough- not in balance-**

M.: **Lookout -L.A.I**

LESSON PLAN

Pre-flight …. to local area

EXERCISE

- Demo attitude
- Demo in stages
- Practice in stages
- Practice L & R

Return & re-join cct … to shutdown

De-brief

ENTRY	MAINTAIN	EXIT
As for medium turn • Lookout • Bank 30 • Balance • Back pressure - maintain height *Then passing 30 deg* • Power - add 100 - 200rpm • Bank to 45° • Balance & • Back pressure increase to maintain height	• Lookout (L-A-I) • Attitude • Instruments *If nose drops:….* • *RoD < 300 fpm, back pressure, balance* • *RoD > 300, reduce bank to 30, pitch up, then re-establish steep turn* • *RoD> 500 – spiral descent recovery*	• Roll wings level • Passing 30, reduce power to 2300 rpm • Relax back pressure • Rudder for Balance • Settle & Adjust • Lookout

Spiral descent recovery:
Power off, Rolls wings level, Pitch up, When speed decreases, Full power, Vy climb

Ex. 16. Forced landing without power (PFL)

AIM: To Learn how to land the aircraft without power

W eather
A ircraft
N otams
T..E.M
S kydemon

T. **Other A/C-Shock Cooling engine Plug fouling-noise/low flying complaints**

E. **Slow speed, over banking - poor field selection-wind calculation**

M.: **Lookout Location low flying rule Engine warming**

LESSON PLAN

Pre-flight

…. Local area

Air exercise

Pick field

Demo x2 from 2500 ft

Practice , no checks

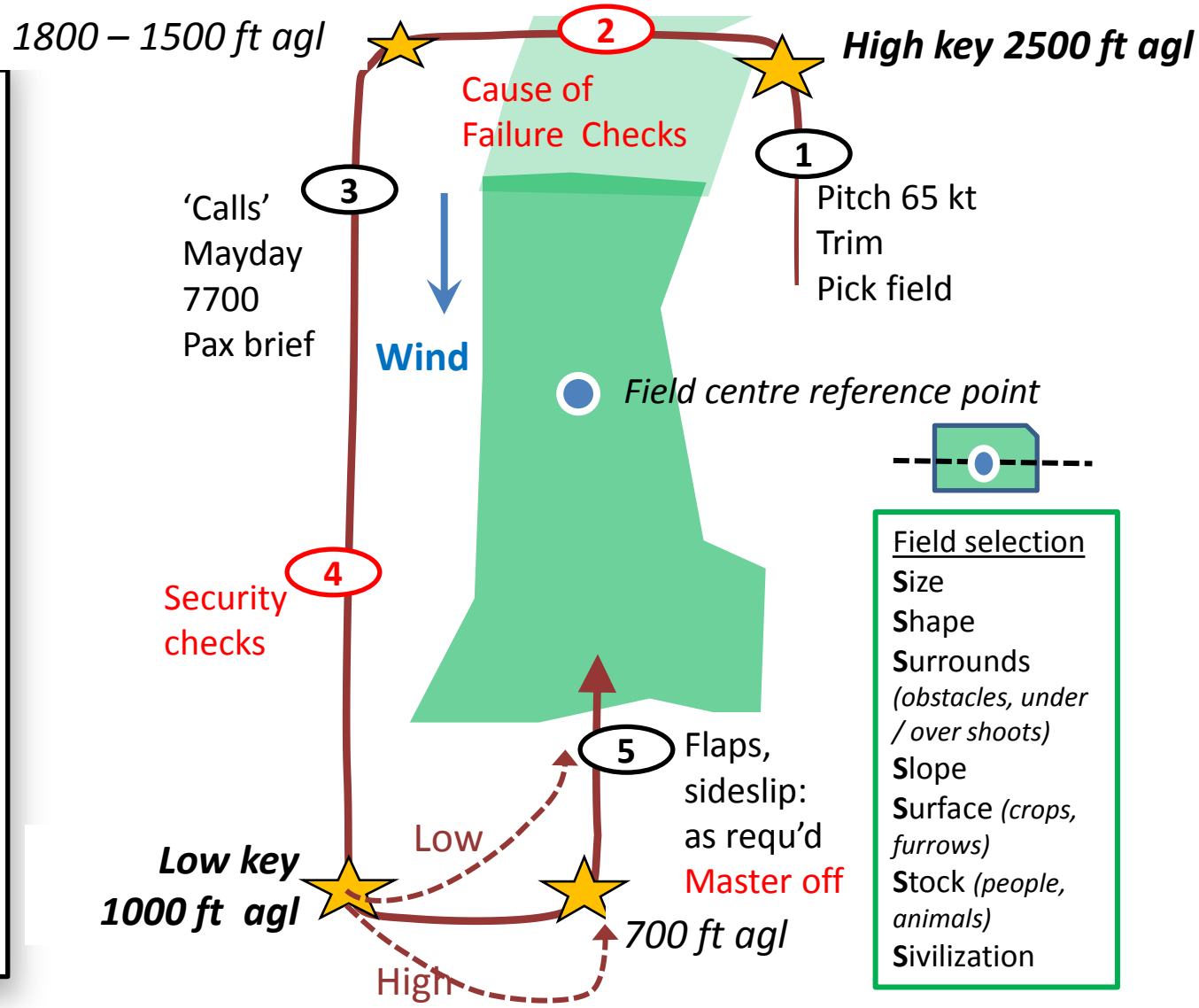
- 2500 ft
- 1500, 1000 ft

Practice

- with checks
- surprise PFL's

Return to EGSL

De-brief



Field selection

Size

Shape

Surrounds *(obstacles, under / over shoots)*

Slope

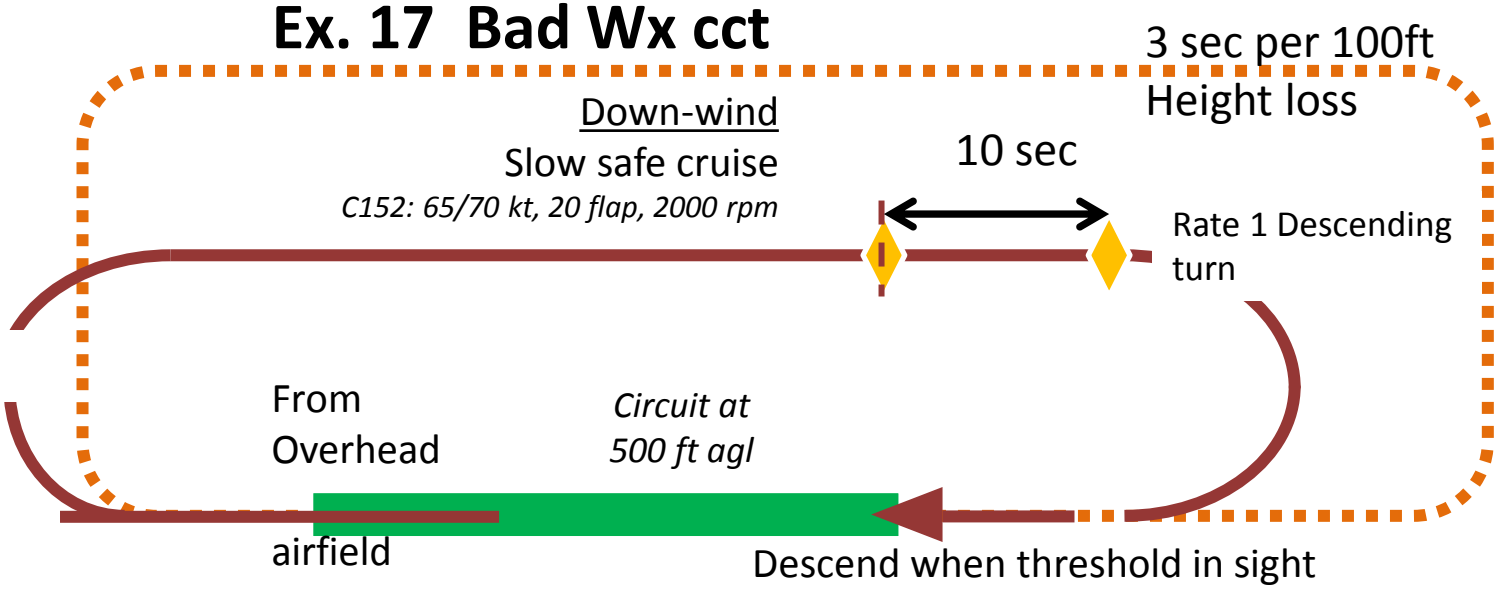
Surface *(crops, furrows)*

Stock *(people, animals)*

Sivilization

T:
Poor weather, Partial Power
E:
Unsuitable Field choice-Fuel Management-
M:
Lookout-Low flying (500´) rule-Slow Safe cruise-Informing ATC Rate 1 turn

Ex. 17 Bad Wx cct



Precautionary landing