Unusual attitudes

Objective

To recognise, and recover to straight and level from a nose-high or nose-low unusual attitude.

Considerations

- Unusual attitude can be entered due high workload, fixation, leans
- Trust the instruments
- Recover to straight and level first
- Then regain altitude and heading
- Change - check - hold - adjust - trim
- Must identify the position of the horizon

Limited panel

1. Check airspeed-stop further increase or decrease
2. Adjust power to compensate
3. Roll wings level

Change If altitude ↑ - ↓ backpressure (push)
If altitude ↓ - ↑ backpressure (pull)
Until 100s pointer stops moving

Check

Hold

Adjust

Trim (but you shouldn't need to)

Air exercise

- Smooth control movements whenever speed above V_A

Attitude	Recognition	Recovery
Nose high	• Low or ↓ airspeed • ↑ altitude • ↑ rate of climb • ↓ engine RPM	• Full power and level wings • Push forward on c/c until airspeed/altimeter stops • Check • Hold • At normal cruise speed reduce power • Adjust • Trim
Nose low	• High or ↑ airspeed • ↓ altitude • ↑ rate of descent • ↑ engine RPM	• ↓ power and level wings • Ease out of dive, check airspeed • When altimeter stops • Check • Set cruise power • Hold • Adjust • Trim
Spiral dive	• High or ↑ airspeed • ↓ altitude • High angle of bank • High rate of descent • High or ↑ G-loads • ↑ engine RPM	• Close throttle and level wings • Ease out of dive, check airspeed • When altimeter stops • Check • Set cruise power • Hold • Adjust • Trim

- When straight and level regained, return to original reference altitude and heading

Airmanship

- Enough height for recovery
- SRS - A/S, Alt, then the rest
- Limiting speeds - V_A, V_{NO}, V_{NE}, and RPM limit

Aeroplane management

- Smooth positive control movements

Human factors

- Human orientation system has limitations
- Instrument failure rare
- Trust the instruments