PART 3

CHAPTER 6—AIR-TO-AIR REFUELLING

Contents

Considerations

1. The aircraft is cleared for air-to-air refuelling (AAR) from Victor K2, Buccaneer S2, VC10 K2 and KC-135 tankers. Sorties of up to nine hours (11 hours, F Mk 6) duration may be undertaken.

2. *Normal Limitations*

a. *Victor K2*

(1) Maximum altitude: 43,000 feet

(2) Minimum speed for making contact and in contact: 250 knots

(3) Maximum speed for making contact and in contact: 290 knots/0·88M or 320 knots/0·88M on centre station

b. *Buccaneer S2*

(1) Speed for making contact and in contact: 250 to 290 knots

c. *KC-135*

(1) Speed for making contact and in contact: 250 to 270 knots

d. *VC10 K2*

(1) Maximum altitude: 35,000 feet.

(2) Speed is to be between 260 and 300 knots. Optimum speed is 280 knots.

3. *Reheat.* Do not use reheat unless absolutely necessary. If full cold power is not adequate, establish lateral separation from the tanker before engaging one reheat only. Do not engage reheat while in contact with the drogue.

Checks Before AAR

4. Before commencing AAR check:

a. Autostabilisation ON and functioning correctly.

b. Fuel contents.

c. Weapons switches safe.

d. Ventral tank emergency transfer switch to NORMAL (F Mk 6).

e. AAR switch to FL REFUEL (ON, T Mk 5)

f. 'Tanks full' indicator lights on.

g. Probe lighting — as required.

Note: Switch off the radar transmitter when in visual contact with the tanker.

Stabilised Position

5. When cleared astern the tanker, wait behind the appropriate drogue noting the trail angle of the hose.

Making Contact

6. When using a wing drogue the following trim adjustments are required:

a. *Victor and KC-135*

(1) Aileron: Two-thirds maximum away from tanker fuselage.

(2) Rudder: a little away from the tanker may be required.

b. *Buccaneer*

(1) Aileron: ¾ maximum away from the tanker.

(2) Rudder: ¾ maximum away from the tanker.

c. *VC10 K2*

(1) Aileron: ¾ maximum away from tanker fuselage.

(2) Rudder: ¼ maximum away from tanker fuselage.

(3) Displacement inboard and/or downward from the normal refuelling position on wing stations causes rolling and yawing moments towards the tanker fuselage. Such displacements are to be avoided.

7. The procedures for making, maintaining and breaking contact are to be found in the No 1 Group AAR SOP.

Hose/Drogue Malfunctions

8. Structural failure of the hose or drogue may result in excessive fuel spillage; the fuel may enter the air intake and cause an engine flame-out. If this occurs, do *not* attempt an immediate relight. Close the appropriate HP cock and wait for as long as practicable but for at least 1½ minutes before carrying out the **Cold Relight** drill.

Probe Damage

9. If the end of the probe is damaged or lost, do not exceed 350 knots.

Checks After AAR

10. When air-to-air refuelling is complete, check:

a. AAR switch to NORMAL (OFF, T Mk 5).

b. Ventral tank feeding.

c. Probe lighting (if used), off.

WARNING: If the AAR switch is left at FL REFUEL (ON, T Mk 5), the ventral and flap tanks do not transfer.