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Book 1, Part 2, Sect. 4)

FLEXIBLE FUEL TANKS

HUNTER AIRCRAFT

GENERAL AND TECHNICAL INFORMATION

BY COMMAND OF THE DEFENCE COUNCIL

J. T. Dunnett

Ministry of Defence

FOR USE IN THE
ROYAL AIR FORCE

(Prepared by the Ministry of Technology)

AMENDMENT RECORD SHEET

To record the incorporation of an Amendment List in this publication, sign against the appropriate A.L. No. and insert the date of incorporation.

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LIST OF ASSOCIATED PUBLICATIONS

A.P.106B–0200–1F6 AIRCRAFT FLEXIBLE TANKS

A.P.101B–1300 SERIES HUNTER AIRCRAFT

FLEXIBLE FUEL TANKS

HUNTER AIRCRAFT

LIST OF CHAPTERS

Chapter 1

HUNTER F. Mk. 6, GA Mk. 9 and FR Mk. 10

CONTENTS

ILLUSTRATIONS

DESCRIPTION

Introduction

1. In the F. Mk. 6, GA Mk. 9 and the FR. Mk. 10 the fuel is carried in 12 fuel tanks, six each side of the centre line of the aircraft; these are made up of two fuselage tanks and four wing tanks, port and starboard.

2. The fuselage tanks are fitted in front and to the rear of the power unit and are referred to as the forward tank P or S and the rear tanks P or S.

3. Wing tanks are referred to as No. 1, 2, 3 or 4 wing tanks, port or starboard, numbered from inboard (fig. 1).

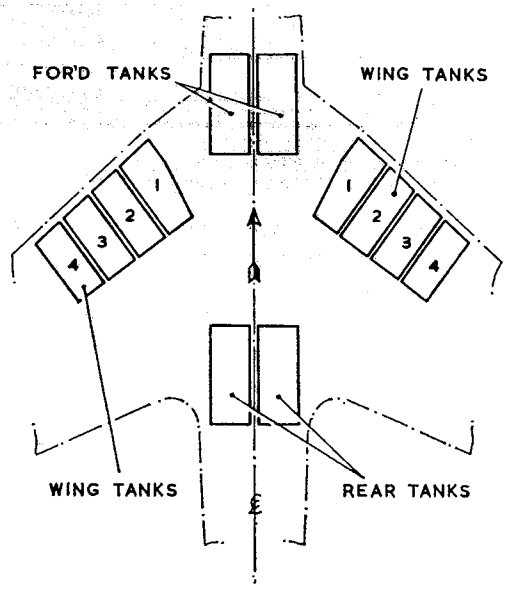


Fig. 1. The disposition of the fuel tanks

4. Drawing and part numbers of the tanks are :—

Tank No.	Tank manufacturer's drawing No.	Aircraft manufacturer's drawing No.	Ref. No.
Forward tank, P	FT/H/9961	D.178291 & D.178297	26FX/9927
„ „ S	FT/H/9962	D.178292 & D.178297	26FX/9928
Rear tank, P	FT/H/9977	D.201055	26FX/9931
„ „ S	FT/H/9978	D.201056	26FX/9932
No. 1 wing tank, P	FT/H/7725	D.206941	26FX/6186
„ „ „ S	FT/H/7726	D.206942	26FX/6187
No. 2 wing tank, P	FT/H/7727	D.206941	26FX/6188
„ „ „ S	FT/H/7728	D.206942	26FX/6189
No. 3 wing tank, P	FT/H/7729	D.206941	26FX/6190
„ „ „ S	FT/H/7730	D.206942	26FX/6191
No. 4 wing tank, P	FT/H/7731	D.206941	26FX/6192
„ „ „ S	FT/H/7732	D.206942	26FX/6193

5. Flexible Hycatrol rubber, HE.4, 0·040 in thick, is used in the manufacture of all the fuel tanks but the fuselage tanks are fitted with an additional glasscloth outer covering which converts them into semi-rigid tanks.

6. The wing tanks are fully flexible and the rubber sheeting is reinforced on the outside with a layer of nylon fabric. On the fuselage tanks the reinforcing fabric is madapolam and this is covered with two layers of heat-resisting glasscloth, each layer being firmly cemented to the under-layer with a fire-resistant cement.

7. Each fuselage tank is tailored to fit its respective tank bay. The glasscloth protective covering acts as a means of support for the tanks which are held in place mainly by their general shape and by the valve connections.

8. The wing tank bays extend from the leading edge to the main spar and each tank is shaped to suit the tank bay lining which is faired over the three intermediate wing stringers, top and bottom. The flexibility of the wing tank material necessitates the use of support studs to hold the material close to the lining. Moulded Hycatrol cambered studs are fitted to the top and bottom panels of the tank and each stud engages in a hole in the tank bay lining. Two Hycatrol buttons, each moulded with a $\frac{1}{8}$ in dia. hole in the top, are fitted at the rear of the top and bottom panels. Each button passes through a hole in the lining where it is supported by an attachment cord passing through the main spar.

9. Tank fittings to the wing and fuselage tanks are mounted on A-type bolt rings. Access to each tank is provided through elongated bolt rings which can be used as handholes. In each wing tank the handhole is at the forward end and is fitted with 24, 2BA bolts. The cover plate of the bolt ring is the mounting plate for some of the tank fittings.

10. The fuselage tanks of all marks of the aircraft are fitted with handholes, each comprising an elongated D-type bolt ring covered with a Hycatrol rubber diaphragm and protected with layers of glasscloth. The handholes, one or two to each tank, are fitted on the inboard or outboard panel and have no connection with the aircraft structure or the tank fittings.

11. Flexible fuel contents gauges are fitted in all the tanks and are held in Hycatrol pockets vulcanized to the inside of the tank skin. Each gauge is supported by moulded rubber studs at the top and bottom of the pocket, each stud passing through a hole in the gauge belt. The leads from each gauge are held in rubber wiring cleats on the inside of the tank and are led to a terminal box mounted on the tank skin.

12. After each tank has been manufactured, cured and tested, it is given two brushed coats of green protective lacquer; a poly-vinyl lacquer is used on the flexible wing tanks and a vinylite lacquer on the glasscloth covering of the fuselage tanks. The tank particulars are stencilled in white lacquer on a prominent part of the outer surface of each tank.

13. The tanks are manufactured to the Ministry of Aviation constructional specification D.T.D.1096 and the specifications of the materials used are :—

Materials	Tank manufacturer's specification	Specification	Ref. No.
Hycatrol sheeting	HEU.4/40	D.T.D.900/4069	32D/445
Nylon reinforcing		D.T.D.801	32D/325
Madapolam reinforcing		D.T.D.343A	32B/556
Glasscloth fabric		D.T.D.5519/T3/150A	32D/321
		or D.T.D.5518/T3/150E	
Hycatrol solution	H.150/20	D.T.D.900/4190	32D/338
Cement, dual mix, parts A & B		D.T.D./R.D.M.7	32D/307
Lacquer, green, flameproof	FPT/PV/79	D.T.D.900/4515	32D/449
Lacquer, green, fireproof	FPT/VL/77	D.T.D.900/4102	32D/323
Lacquer, white, marking	FPT/PV/81	D.T.D.900/4481	32D/467

14. Each port wing or fuselage tank is identical in shape, size and disposition of the fittings, to its respective starboard tank but is constructed on the opposite hand. The following description of each port tank applies to the corresponding starboard tank on the reverse side.

Forward fuselage tank (fig. 2)

15. This is the main tank of the fuel system, it has the largest capacity and carries the fuel booster pump. Fuel from the wing tanks and the rear fuselage tanks is transferred, under pressure, to this tank. The pump is housed on a base plate which is secured to a rectangular bolt ring in the bottom of the tank by means of 34, 2BA bolts.

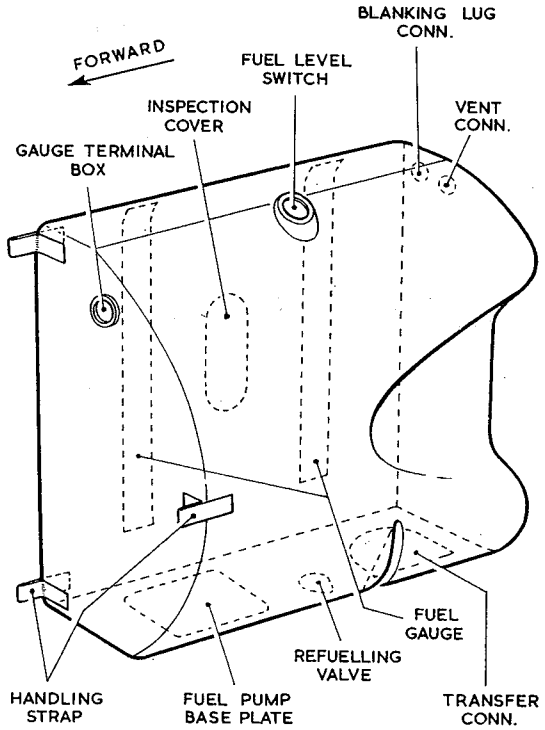


Fig. 2. Forward fuselage tank

16. A fuel trap is fitted inside the tank, over the booster pump, to ensure a supply of fuel to the engine at all attitudes of the aircraft. The light alloy trap is covered with Hycatrol sheeting, the edges of which are vulcanized to the inside of the tank skin. The sheeting is cut away and fastened by means of metal retaining rings over two anti-surge flap valves which are fitted in the top and rear of the trap.

17. To the rear of the pump base plate is a pear-shaped bolt ring, fitted with twelve 2 BA bolts, to take the refuelling valve.

18. Two fuel contents gauges are provided and both are fitted on the inside of the inboard panel. The connecting leads are held in seven wiring cleats on the inside surface of the tank and are led to a terminal box mounted on a bolt ring at the forward end of the tank.

19. Fuel is transferred from the other fuselage and wing tanks through a connection which is bolted to a mounting plate, secured to a D-shaped bolt ring in the rear of the tank bottom. The mounting plate, which also carries the inverted-flight recuperator, is secured to the bolt-ring with 32, 2 BA bolts.

20. A vent fitting is fitted inside the tank at the top of the rear panel and is secured to a two-way bolt ring by means of six 2 BA bolts. The external vent pipe is secured to the outside of the bolt ring with a similar number of bolts.

21. Adjacent to the vent fittings is a bolt ring for housing a vapour release valve. The aperture is blanked off when not required and two lugs, fitted on the blanking plate, are connected to the aircraft structure by wire to facilitate removal.

22. On the top of the tank is a specially moulded angled bolt ring to take a fuel level switch. The bolt ring is designed with twelve bolts, eleven of

which are 2 BA and one $\frac{1}{4}$ in BSF. The latter is situated at the rear outboard position on the port tank and at the forward outboard position on the starboard tank.

23. An inspection handhole is provided on the inboard panel and comprises an elongated D-type bolt ring fitted with a Hycatrol cover and protected with glasscloth fabric.

24. Five metal D-shaped rings are cemented to the top of the tank to help support it in the tank bay. Kite cord is looped through the rings from retaining nuts in the aircraft structure.

25. Terylene tape, 3 in wide, with $1\frac{1}{2}$ in wide nylon ribbon looped along its length, is cemented to the outside of the top and ends of the tank for securing the tank to the battens of the storage crate. Heavy 3 in wide webbing handling straps are cemented to the forward end of the tank for installation and lifting purposes.

Capacity of the tank ... ... 101 gal.

Rear fuselage tank (fig. 3)

26. The rear tank is connected to the forward tank through a fuel transfer connection on the bottom of the front panel. The feed line is secured, by means of eight 2 BA bolts, to a special moulded bolt ring which is shaped to project below the bottom of the tank.

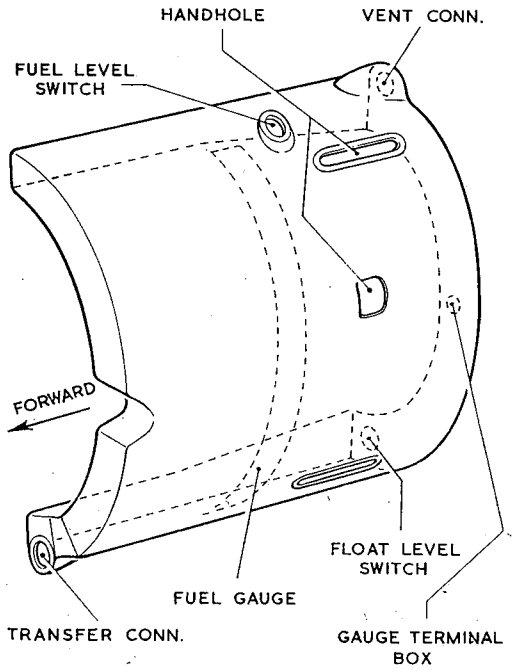


Fig. 3. Rear fuselage tank

27. A similar size bolt ring is fitted at the top of the rear panel to take the vent connection which is bolted to the vent outlet pipe.

28. At the bottom of the rear panel is the float level switch which is secured to a bolt ring by means of seven 2 BA bolts and one $\frac{1}{4}$ in BSF bolt. The latter is situated on the bottom of the ring for the correct location of the unit.

29. A fuel level switch is fitted to a bolt ring on the top of the outboard panel. The ring is fitted with eleven 2 BA bolts and one $\frac{1}{4}$ in BSF location bolt. In the port tank the $\frac{1}{4}$ in bolt is on the after side of the ring but in the starboard tank it is on the forward side.

30. The tank is provided with a flexible fuel contents gauge which is held in sockets on the inside of the outer panel. The leads from the unit are held in six wiring cleats vulcanized to the inside surface and are led to a terminal box positioned in the centre of the rear panel. The box is secured to a bolt ring by means of eight 2 BA bolts.

31. Access to the inside of the tank for fitting the fuel gauge is through two elongated D-type bolt rings on the outboard panel. Both handholes are covered with glasscloth protective fabric.

32. An explosion suppression unit is fitted inside the tank and each end of the unit is supported by three ball-lock studs on a Hycatrol pad vulcanized to the inside of the inboard and outboard panels. The unit can be easily installed or removed by compressing the balls in each stud.

33. To provide access to the explosion suppression unit a small access hole is fitted in the outer panel. This hole comprises an A-type bolt ring with 13, 2 BA bolts and one $\frac{1}{4}$ in BSF bolt which is situated on the forward edge of the ring for locating the cover plate.

34. Terylene tape, 3 in wide with $1\frac{1}{2}$ in nylon ribbon fastened in loops along its length, is cemented along the outboard and inboard sides of the tank to facilitate securing to the battens of the supporting crate during transit or storage.

Capacity of the tank ... ... 26 gal.

No. 1 wing tank (fig. 4 and 5)

35. This is the inboard of the four wing tanks and is situated between the leading edge and the main spar, and extends from nose rib A to nose rib 1. It is connected to the fuel feed line through a fuel duct secured to a bolt ring on the inboard panel. The bolt ring is positioned in the rear of the panel and is fitted with twelve 2 BA bolts.

36. The tank is directly connected to No. 2 tank through a connection on the outboard panel. This connection comprises a pad ring mounted on to the tank skin and situated opposite a similar pad ring in No. 2 tank. The connecting pipes are bolted together and clamped on to the pad rings with the dividing wing rib between them.

37. An access handhole is provided in the front of the tank and consists of a rectangular bolt ring fitted with 24, 2 BA bolts and a cover plate. The cover plate acts as a mounting plate for the connection of the air pressure pipe which passes

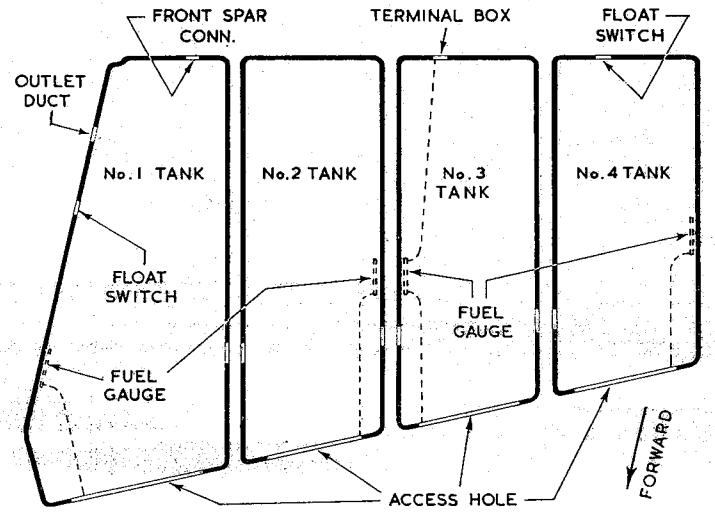


Fig. 4. General layout of the wing tanks

through the tank from the outboard drop tank. The pipe passes out from the tank through a bulkhead connection which is secured to a bolt ring on the rear panel.

38. A float switch is fitted in this tank and is secured to a bolt ring on the inboard panel by means of eight 2 BA bolts.

39. Vulcanized to the inside of the inboard panel is a Hycatrol attachment strip to take the flexible fuel contents gauge. The leads from the unit are held in four wiring cleats on the tank floor and are led to a terminal box bolted to the access hole cover plate. The gauge unit and the attachment strip are supported by moulded cambered studs, three inside the tank to hold the unit and three outside to support the tank skin in the immediate vicinity of the unit.

40. The remainder of the tank skin is supported in its tank bay by 14 cambered studs and four moulded buttons positioned over the top and bottom panels.

No. 2 wing tank

41. The tank is situated between nose ribs 1 and 2 and is directly connected to No. 1 tank on its inboard side and to No. 3 on the outboard side, through fuel transfer pipes.

42. Each connection comprises a moulded pad ring on the side of the tank positioned to coincide with the corresponding ring on the adjacent tank. The ring is clamped to its opposite ring, with the dividing nose rib between, by means of the securing bolts of the transfer pipes.

43. An access handhole, similar in shape and size to that fitted in No. 1 tank, is provided in the front panel and the cover plate carries the terminal box for the fuel contents gauge. The flexible gauge is held in an attachment pocket vulcanized to the inside of the outboard panel. The unit is held in place by means of three moulded cambered studs inside the tank and is supported outside by two similar studs.

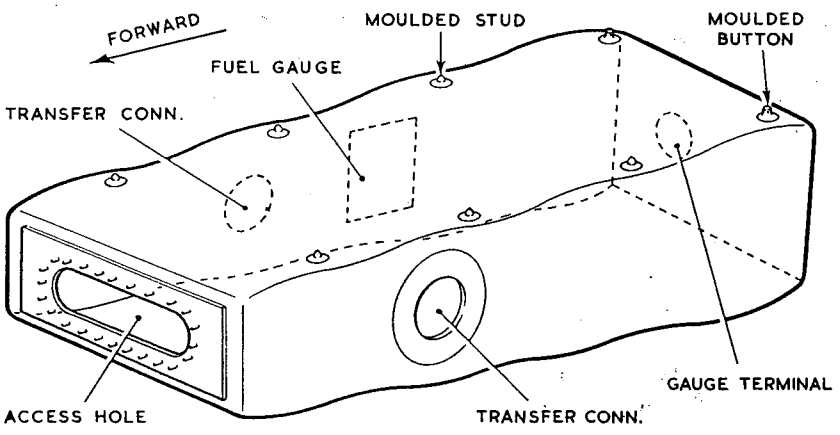


Fig. 5. Typical wing tank

44. The tank is supported in its tank bay by twelve cambered studs, six on the top and six on the bottom panel.

No. 3 wing tank

45. This tank lies between nose ribs 2 and 3, outboard of No. 2 tank and inboard of No. 4 tank. It is connected to the adjacent tanks through a fuel transfer connection bolted to a pad ring in each wall of the tank.

46. The access handhole in the front panel is similar to that fitted in No. 1 and 2 tank.

47. On the inside of the inboard panel is vulcanized a Hycatrol pocket for the flexible fuel gauge. It should be noted that the unit carries two sets of leads, the longer red and black leads must be taken to a terminal box on the access hole cover plate and the shorter leads to a terminal box secured to a bolt ring on the rear panel of the tank. Each set of leads is held in three Hycatrol wiring cleats vulcanized to the floor of the tank.

48. The gauge unit and the tank itself is supported in the tank bay by means of moulded studs and buttons as for No. 2 tank.

No. 4 wing tank

49. With the exception of the outer wing drop tank, the wing fuel tankage terminates with this tank. It lies between nose rib No. 3 on the inboard side and nose rib G on the outboard.

50. The tank is directly connected to No. 3 tank through a fuel transfer pipe bolted to a moulded pad ring on the inboard panel. The pad ring is positioned opposite the corresponding pad ring in No. 3 tank and is clamped to it with the nose rib between.

51. An access handhole, similar in shape and size to those fitted in the other wing tanks, is provided in the front of the tank and the cover plate houses a fuel transfer pipe connecting the tank to the outboard drop tank.

52. The flexible fuel contents gauge is housed in a Hycatrol pocket on the inside of the outboard panel. The leads, which are held in three wiring cleats on the tank floor, are led to a terminal box on the access hole cover plate.

53. A float switch is fitted in this tank and the assembly is bolted to a bolt ring on the rear panel. The unit is secured with seven 2 BA bolts and one $\frac{1}{4}$ in BSF bolt, the latter being positioned at the top of the ring for the correct location of the switch.

54. The tank is supported in its tank bay by twelve moulded cambered studs and four moulded buttons positioned over the top and bottom of the tank as in No. 2 and 3 tank.

REPAIR

Introduction

55. The fuselage and wing tanks are manufactured with a basic sheeting of Hycatrol HE.4, 0·040 in thick. The wing tank sheeting is reinforced on the outside with a layer of nylon fabric, D.T.D.801, and then treated with two coats of green protective lacquer. On the fuselage tanks, the nylon fabric is replaced with madapolam, D.T.D.343 and then covered with two layers of glasscloth fabric to B.S.3396. The outer surface of the top layer of glasscloth is treated with two coats of green vinylite lacquer.

56. Repairs to damaged wing tanks are fully described in A.P.106B–0200–1F6, Chap. 5. Fuselage tanks which have sustained major damage should be returned to the manufacturer; minor repairs to these glasscloth covered tanks are described in A.P.106B–0200–1F6, Chap. 6, but it should be noted that the cement used in applying the glasscloth coverings is to D.T.D.900/4451.

FOLDING AND PACKING

Introduction

57. The fuselage tanks are constructed from flexible Hycatrol sheeting but are further protected with two layers of glasscloth fabric which are cemented to the tank skin forming a stiffened, semi-rigid tank which must not be folded.

58. Wing tanks are fully flexible and can be safely folded and packed for transport or storage provided due care is taken not to damage the flexible fuel gauges inside the tanks.

59. Before any attempt is made to fold or pack a tank, the apertures must be sealed and all the precautions taken as described in A.P.106B–0200–1F6, Chap. 4, Pre-folding Procedure.

Fuselage tanks (fig. 6)

60. These tanks are not to be folded or creased but must be supported inside a crate in such a manner that each tank retains its normal shape. The crate must be made of soft wood battens or slats to specification UK/CIS/1814 with all the edges or corners of the battens likely to come in contact with the tank, well rounded and sanded to prevent any damage to the tank skin.

61. Each tank must have all its apertures blanked off with light alloy or aluminium blanking plates bolted to the existing bolts of the bolt rings. One of the blanking plates must be fitted with a schrader valve, or similar fitting, to enable the tank to be slightly inflated. Extra care must be taken not to over-inflate the tank, only sufficient air is to be inserted for the tank to retain its shape.

62. The tank is then suspended in its crate by means of webbing straps passed alternately through the nylon support loops on the tank skin and over the battens of the crate.

May 1982

FLEXIBLE FUEL TANKS

HUNTER AIRCRAFT

ADVANCE INFORMATION LEAFLET No.1/82

Insert this leaflet to face Page 6

These instructions should be read following paragraphs 56 and 59 respectively.

56A. Tanks returned R/D (Repairable, Depot). Drain the tank completely and swab, flush or spray the inside of the tank with Aeroshell 100 or equivalent lubricating oil (OM-11, NATO Code No.O-135, or OM-13, NATO Code No.O-134). Ensure that the tank is marked 'INHIBITED' and that the associated condition label is endorsed to that effect.

The adoption of this procedure will ensure that the tanks and their associated fittings are given a full measure of protection.

59A. If it is necessary to remove flexible tanks from an aircraft for a period, i.e. for a major modification programme, etc. the following procedure should be adopted to prevent drying out of the interior surfaces of the tank, with the consequent possible damage to the interior surfaces.

(1) Short Term Storage (up to 12 weeks). Drain the tanks and blank off all apertures. Do not dry out the tanks.

(2) Medium Term Storage (three to six months). Drain the tank completely and swab, flush or spray the inside of the tank with AeroShell 100 or equivalent lubricating oil. Blank off all the apertures. Alternatively, in the case of fuel tanks, a certain amount of fuel may be left in the tank (5 per cent of the fuel contents up to maximum of 10 gallons). Blank off apertures.

(3) Long Term Storage (six months or more). The same procedure must be carried out as described for the medium term storage, but every six months the tank should be topped up or retreated with AeroShell 100 according to its first treatment.

Note ...

(1) The information contained in this leaflet will be incorporated by normal amendment list action in due course.

(2) If, after receipt of this leaflet, an amendment list with a prior date and conflicting information is received, the information in the leaflet is to take precedence.

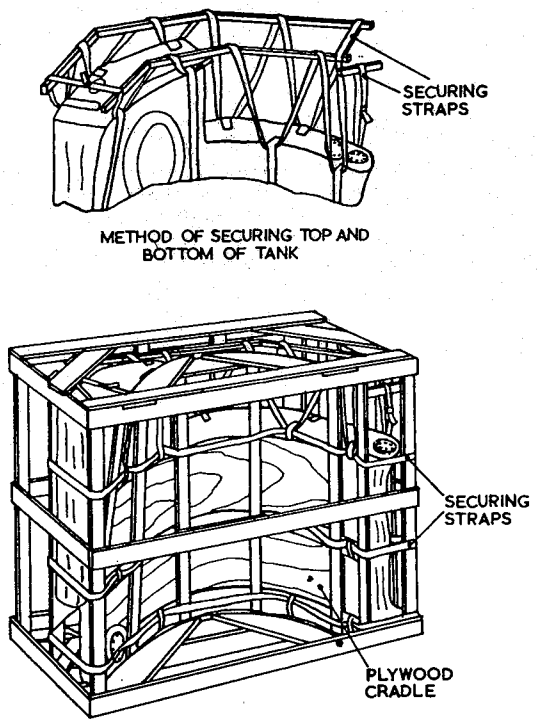


Fig. 6. Typical primary crate

63. Each crate must be boxed in a separate outer container made to specification UK/DIS/1937, which may be of batten and plywood or tongued and grooved soft wood construction according to the gross weight, size and destination of the tank. The outer container must be lined with waterproof, rot-proof, kraft paper and all the joints sealed with a rubber-resin compound.

64. Reference numbers and the tank particulars must be stencilled in one inch black letters and numerals on the primary crate and also on the outside of the outer container.

65. The sizes of the crates are dependent on the thickness of the material used but the approximate external dimensions of each crate are :—

Forward fuselage	...	50 in × 46 in × 27 in
Rear fuselage ...	...	55 in × 41 in × 27 in

Wing tanks

66. No. 1 tank differs in shape and number of tank fittings, from No. 2, 3 and 4 tanks and requires a slightly modified folding procedure to that of the other tanks. No. 2, 3 and 4 tanks, for folding purposes, can be regarded as identical. The folding procedure for the port tanks applies also to the starboard tanks on the opposite hand.

Folding No. 1 wing tank (fig. 7)

67. To fold the tank, proceed as follows :—

(1) Collapse the tank so that the top face falls naturally on to the bottom. Place three layers of corrugated paper over the top surface and neatly fold the side panels on top of the paper. Care must be taken to ensure that the flexible fuel gauge lies flat on the corrugated paper. Place another layer of corrugated paper over the whole top of the tank and fold down the forward end so that the handhole lies flat.

(2) Place a 3 in dia. roll of corrugated paper across the tank at A–A, just forward of the outboard transfer connection and fold over the front end of the tank. Smooth out all the underneath creases and ensure that the covered handhole lies flat underneath.

(3) Place a similar roll of corrugated paper across the tank at B–B, to come between the inboard outlet duct and the float switch bolt ring. Fold over the rear end of the tank and smooth out all the underneath creases.

(4) Insert small rolls or pads of corrugated paper in all the sharp creases or folds.

Folding No. 2, 3 or 4 wing tank (fig. 8)

68. To fold any of these tanks, proceed as follows :—

(1) Place the tank the right way up and allow the top surface to collapse naturally. Place four layers of corrugated paper over the top and neatly fold over the side panels on top of the paper. Ensure that the flexible fuel gauge lies flat and undistorted.

(2) Fold over the front and rear panels so that they lie neatly on top of the side panels. Smooth out all the underneath folds and insert short rolls of corrugated paper at the corners, as shown, to prevent any sharp creases.

(3) Place two layers of corrugated paper over the whole of the top surface and place a 3 in dia. roll of corrugated paper across the tank at A–A just clear of the transfer connections. Fold the rear end of the tank over the roll in Z fashion and insert another 3 in dia. roll of corrugated paper at B–B across the bottom of the tank.

(4) Smooth out all the underneath creases and folds and insert small rolls or pads of corrugated paper in all the sharp creases and folds.

Packing

69. After each wing tank has been folded it must be overwrapped with corrugated paper, sealed in a polythene bag and packed in a lined batten and plywood outer container as described in A.P.106B-0200-1F6, Chap. 7, Post-folding Procedure. The internal dimensions of the outer containers are :—

No. 1 wing tank	...	21 in × 19 in × 7 in
No. 2, 3 or 4 wing tank		17 in × 17 in × 9 in

Materials

70. The materials used in folding and packing the wing tanks and for crating and boxing the fuselage tanks are given in A.P.106B–0200–1F6, Chap. 7 and are referenced in A.P.1086. The general requirements for packaging the tanks are contained in DEF.1234 – General Requirements for Packaging Supplies for the Services.

Drawings

71. If further information is required, the folding and packing drawings with the Service Packing Instruction Sheet can be obtained from the appropriate Specialist Maintenance Unit.

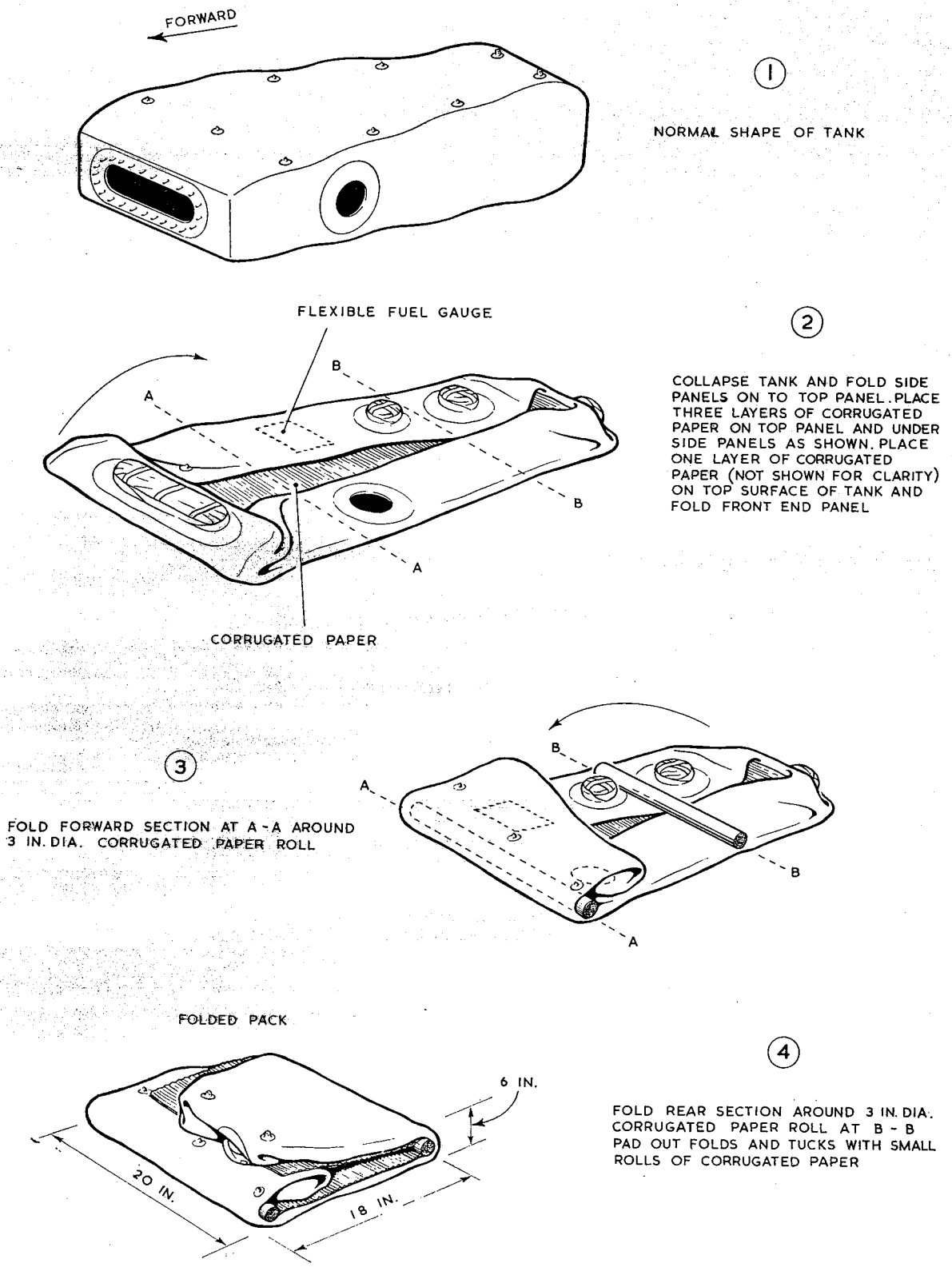
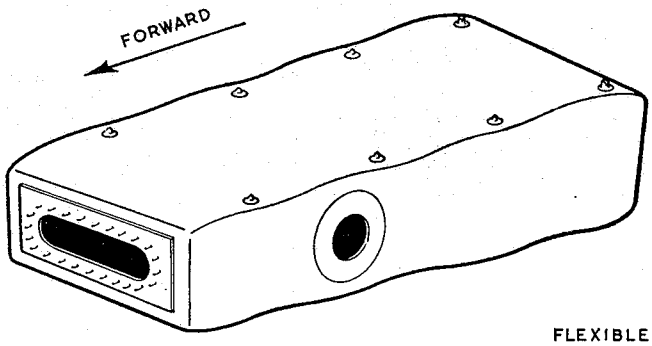
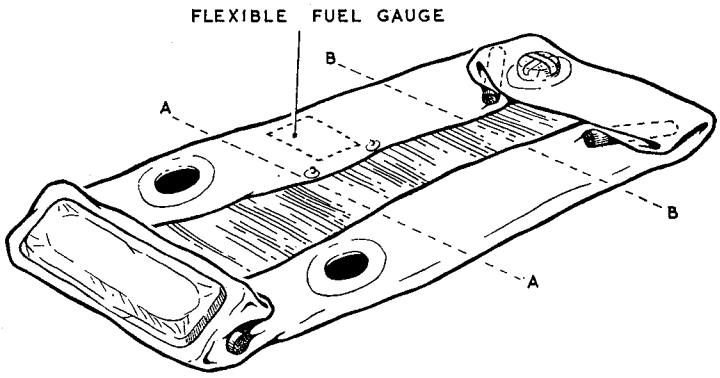


Fig 7. Folding No. 1 wing tank



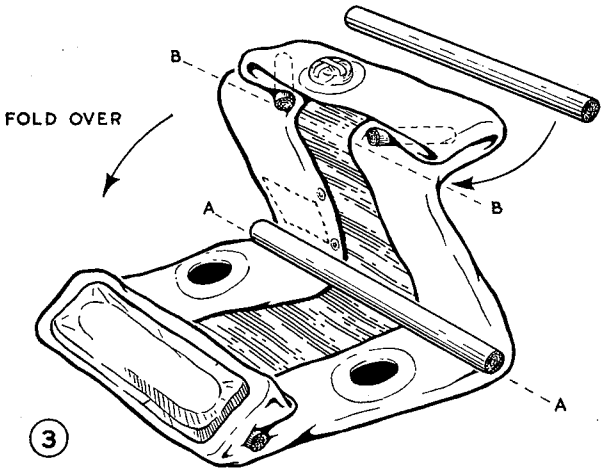
(1)

NORMAL SHAPE OF TANK



(2)

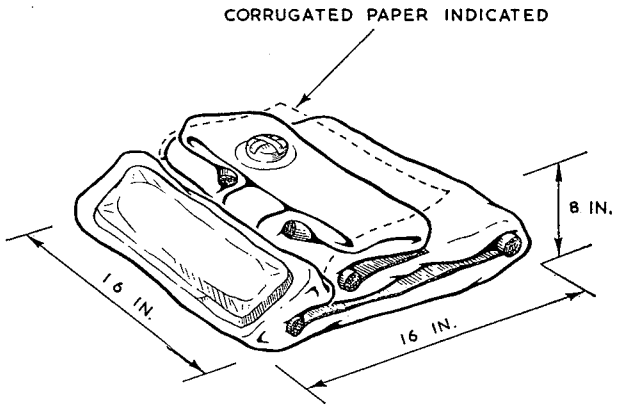
COLLAPSE TANK AND FOLD SIDE PANELS OVER AND ON TO TOP PANEL. PLACE FOUR LAYERS OF CORRUGATED PAPER ON TOP PANEL AND UNDER SIDE PANELS AS SHOWN



(3)

FOLD OVER END PANELS AS (2) AND PLACE 3 IN. DIA. CORRUGATED PAPER ROLLS IN END PANEL FOLDS AS SHOWN. PLACE TWO LAYERS OF CORRUGATED PAPER (NOT SHOWN FOR CLARITY) ON TOP SURFACE OF TANK. FOLD AS (3) AROUND 3 IN. DIA. CORRUGATED PAPER ROLLS. A - A AND B - B INDICATE POSITION OF FOLD LINES.

NOTE : FOLD A - A MUST BE CLEAR OF FLEXIBLE FUEL GAUGE



(4)

FOLDED PACK. PAD OUT ALL FOLDS AND TUCKS WITH SMALL ROLLS OF CORRUGATED PAPER

Fig. 8. Folding No. 2, 3 or 4 wing tank

Chapter 2

HUNTER T. Mk. 7 and 7A, Mk. 8C and 11

CONTENTS

ILLUSTRATIONS

DESCRIPTION

Introduction

1. The fuel tankage of these marks of the aircraft is similar to that of the F. Mk. 6 and FR. Mk. 10 with the exception of the rear fuselage tanks which are not fitted but are replaced with centre fuselage tanks port and starboard (fig. 1).

2. Wing tanks and the forward fuselage tanks are interchangeable with the other marks of the aircraft. The drawing and part numbers of the tanks fitted are :—

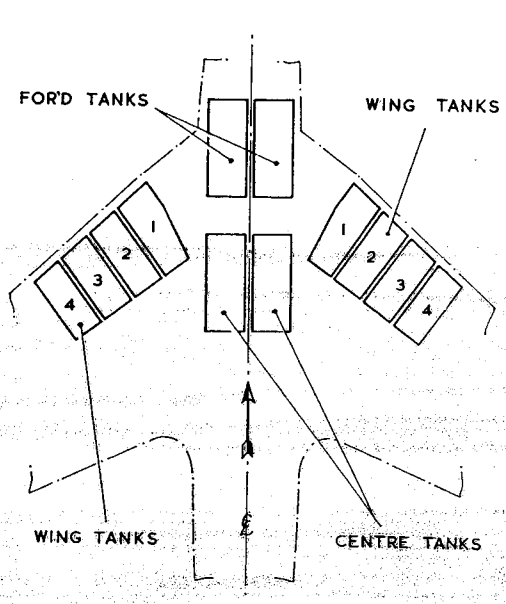


Fig. 1. Disposition of the fuel tanks

Tank No.	Tank manufacturer's drawing No.	Aircraft manufacturer's drawing No.	Ref. No.
Forward tank, P	FT/H/9961	D.178291 & D.178297	26FX/9927
,, ,, S	FT/H/9962	D.178292 & D.178297	26FX/9928
Centre tank, P	FT/H/9965	D.178293 & D.178298	26FX/9929
,, ,, S	FT/H/9966	D.178294 & D.178298	26FX/9930
No. 1 wing tank, P	FT/H/7725	D.206941	26FX/6186
,, ,, ,, S	FT/H/7726	D.206942	26FX/6187
No. 2 wing tank, P	FT/H/7727	D.206941	26FX/6188
,, ,, ,, S	FT/H/7728	D.206942	26FX/6189
No. 3 wing tank, P	FT/H/7729	D.206941	26FX/6190
,, ,, ,, S	FT/H/7730	D.206942	26FX/6191
No. 4 wing tank, P	FT/H/7731	D.206941	26FX/6192
,, ,, ,, S	FT/H/7732	D.206942	26FX/6193

3. Flexible Hycatrol sheeting, HE.4, 0·040 in thick, is used in the manufacture of the centre fuselage tanks and each tank is reinforced on the outside with two layers of glasscloth fabric which are cemented on to the tank skin.

4. The port and starboard tanks are identical in construction but are on opposite hands. The following description of the port tank applies also to the starboard tank on the reverse hand.

The centre fuselage tank (fig. 2)

5. The fuel from this tank is transferred to the forward fuselage tank through a connection on the bottom of the forward panel. The connection comprises a specially moulded bolt ring fitted with eight 2 BA bolts and is positioned below the level of the bottom of the tank to avoid any collection of unusable fuel.

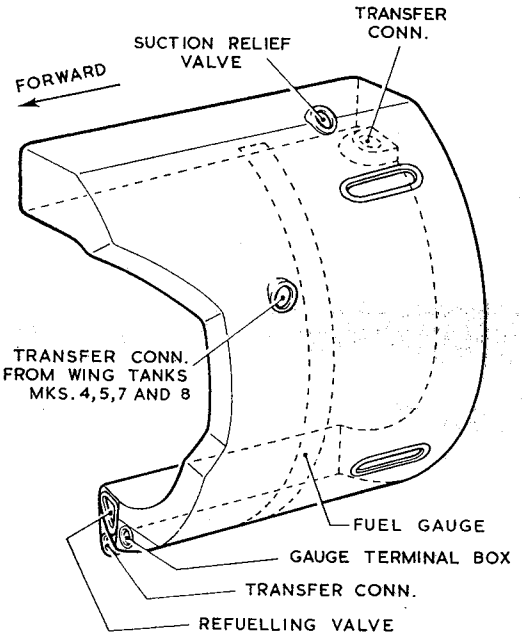


Fig. 2. Centre fuselage tank

6. A fuel transfer connection is also provided at the top of the inside panel, to the rear of the tank, for use if a rear fuselage tank is fitted. The connection is a bolt ring with eight 2 BA bolts but the connection is blanked off in these marks of the aircraft.

7. Fuel from the wing tanks is transferred through a feed line which is secured to a bolt ring on the outboard panel of the tank. The bolt ring is a specially moulded A-type ring, with eight 2 BA bolts, and is slightly angled to the contour of the tank to take the feed connection.

8. The tank refuelling connection is bolted to a special pear-shaped bolt ring, fitted with twelve BA bolts, positioned on the bottom of the forward panel, just above the transfer connection.

9. On the top of the outboard panel is fitted a bolt ring to house the suction relief valve. The bolt ring is fitted with six 2 BA bolts and is slightly angled so that it is clear of the top of the tank.

10. A flexible fuel gauge is fitted inside the outer panel of the tank and the leads are held in two wiring cleats and led to a terminal box on the bottom of the front face. The terminal box is secured to the bolt ring with eight 2 BA bolts.

11. Two handholes are fitted, one at the top and the other at the bottom of the outboard panel, to provide access to the inside of the tank for fitting the fuel contents gauge and wiring. Both handholes are covered with protective glasscloth fabric.

12. Seven steel D-rings, held in place with heavy fabric webbing, are cemented to the outside of the forward panel and on top of the outboard face to help support the tank in the tank bay.

13. Nylon ribbon, 1½ in wide, looped along terylene tape, is cemented to the outside glasscloth fabric covering to help support the tank in its crate when in store or in transit.

Capacity of the tank ... ... 35 gal.

REPAIR

Introduction

14. The repair of damaged fuselage and wing tanks is the same procedure as described in Chap. 1 and is also fully covered in A.P.106B–0200–1F6, Chap. 5 and 6.

FOLDING AND PACKING

Introduction

15. The folding procedure for the wing tanks and the packaging of the front fuselage tanks are the same as described in Chap. 1.

16. Before attempting to pack the centre fuselage tanks, all the apertures must be sealed with aluminium or light alloy blanking plates and all the precautions taken as described in A.P.106B–0200–1F6, Chap. 7.

Packing the centre fuselage tank

17. The tank must not be folded but must be supported inside a suitable wooden crate in such a manner that the tank retains its natural shape. The crate must be made of soft wood battens or slats, to specification UK/CIS/1814, with all the edges and corners well rounded and smooth to prevent any damage to the tank skin.

18. One of the bolt ring blanking plates must be fitted with a Schrader or similar type of air inflation valve and the tank must be inflated just sufficiently for the tank to retain its shape. Care must be taken not to over-inflate the tank, especially if transport by air is contemplated.

19. The tank must be suspended in its crate by means of webbing straps passed alternately through the nylon loops on the tank and over the battens of the crate. The crated tank is then boxed in a batten and plywood, or tongued and grooved soft wood, outer container which must be lined with water-proof, rot-proof Kraft paper and all the joints sealed with a rubber-resin compound.

20. Tank particulars must be stencilled on the primary crate and the outer container as described in Chap. 1.

21. Approximate external dimensions of the crate are 53 in × 46 in × 30 in.

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