



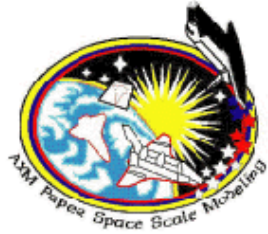
External Tank & Solid Rocket Boosters External Markings

Author: Alfonso X. Moreno

www.axmpaperspacescalemodels.com

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Reference Manual for Space Shuttle Modelers

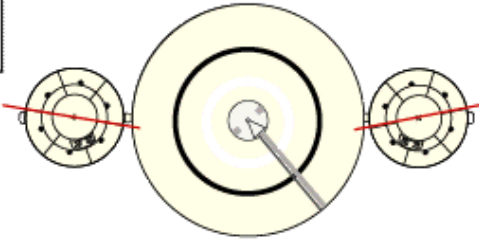


External Tank - Solid Rocket Booster Markings

Stack #1

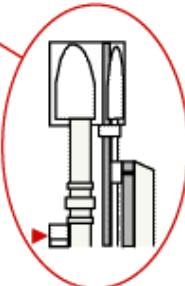
Missions flown:
1981: STS-1

Note details and angles



Bipod design:
45 degree angle (STS-1 through 41-G)

Note detail of fuel lines.
Also note size of bipod foam.



Note position of "LOADED" markings on SRB's

Note white band and circular patches

Dots only on left side

Note left side PAL ramp

LO2 PAL ramp and LH2 PAL ramp

Light cream color

Note detail STS-1 only

Bipod (cream color)

LOADED

L

R

R

L

R



Note detail Green-left Red-right

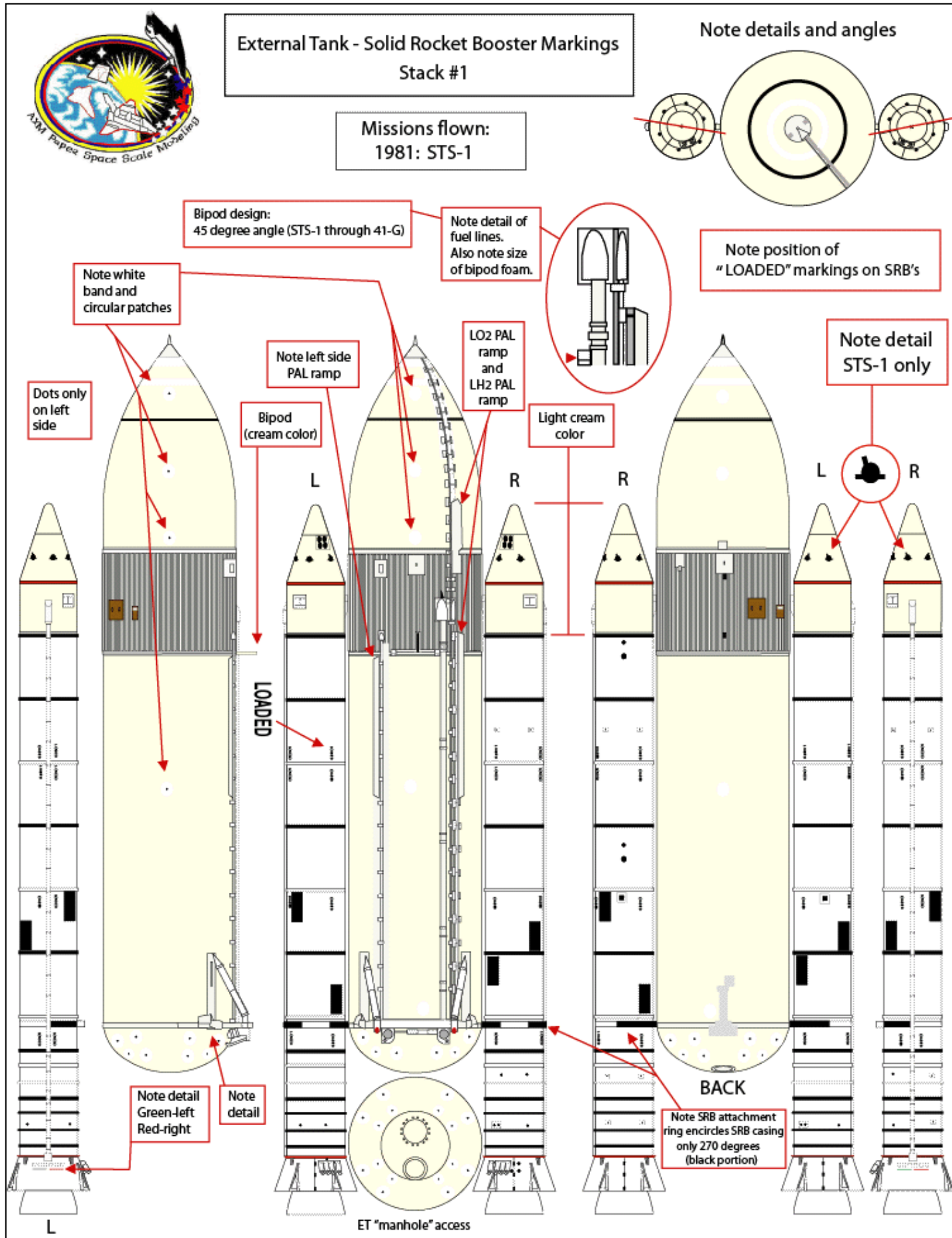
Note detail

Note SRB attachment ring encircles SRB casing only 270 degrees (black portion)

BACK

ET "manhole" access

L

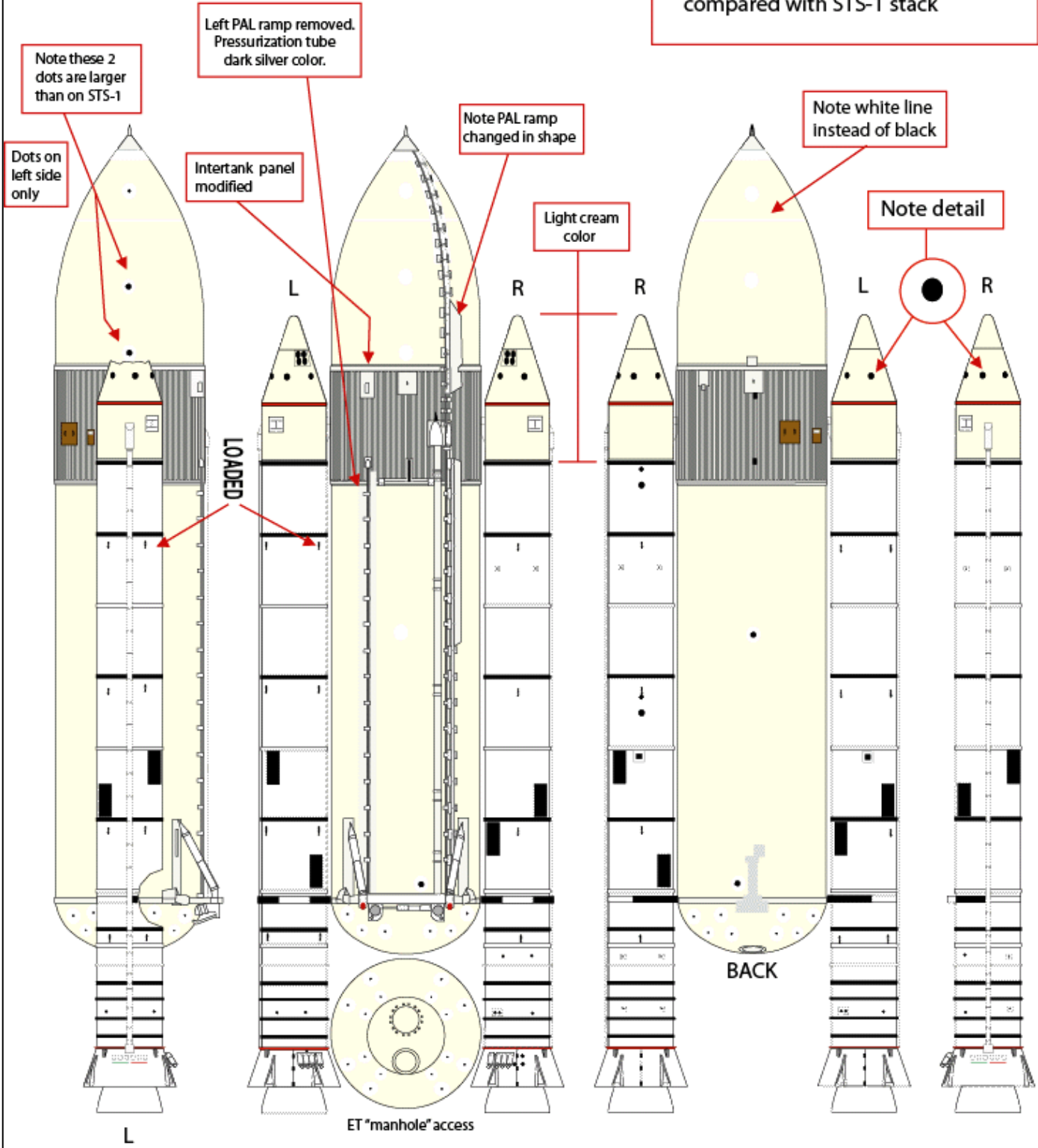




External Tank - Solid Rocket Booster Markings Stack #1.1

Missions flown:
1981: STS-2

“LOADED” markings are smaller and in asymmetrical position when compared with STS-1 stack





External Tank - Solid Rocket Booster Markings Stack #1A

Missions flown:
1982: STS-3, STS-4, STS-5
1983: STS-7

"LOADED" markings
identical pattern as
STS-2

Note traces of
circular patches
from STS-2

Note External Tank color tones

STS-5 has no
circular patches
on ET

White cone

STS-5 only

Fuel lines
are rusted
color on STS-3

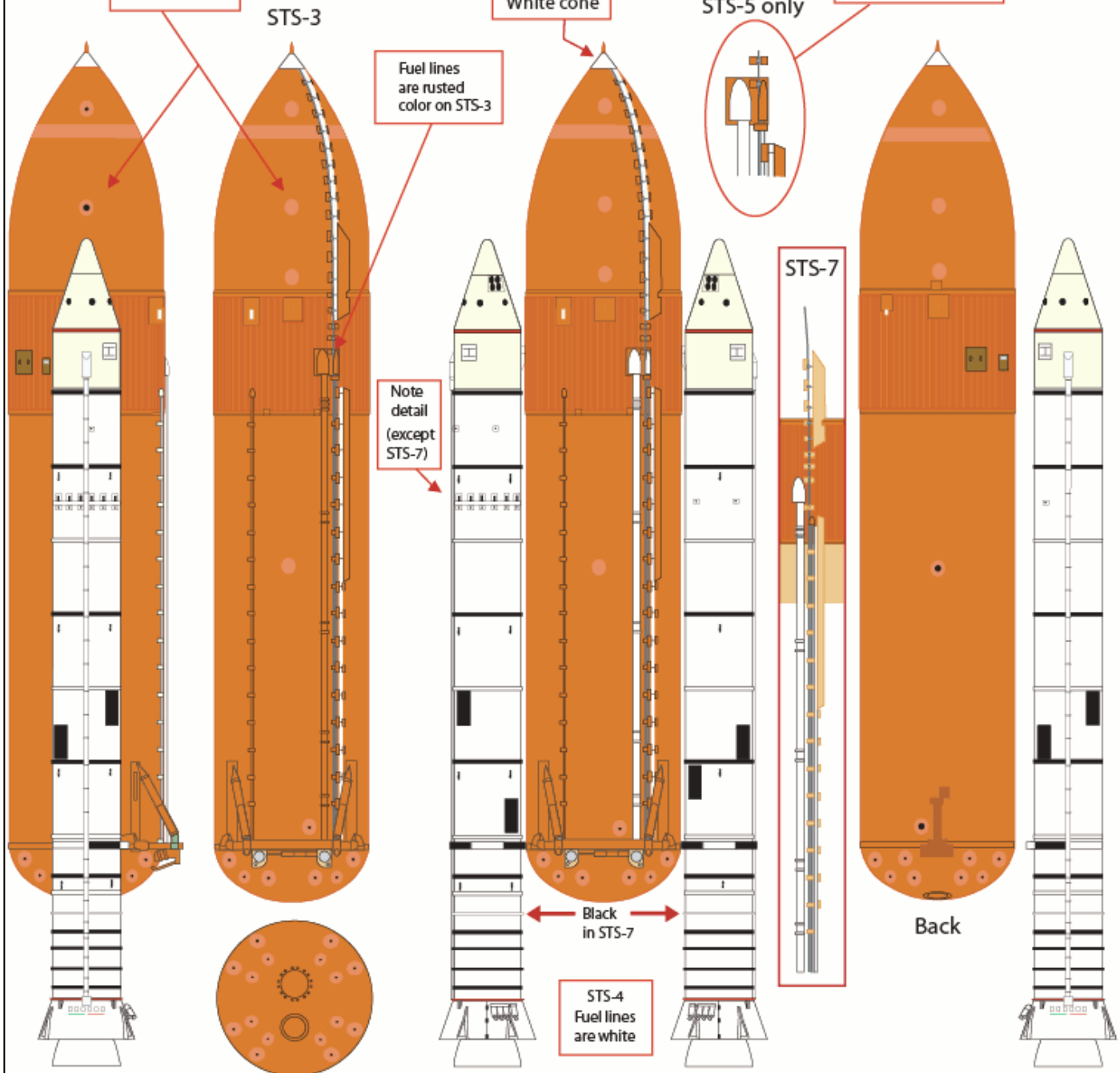
Note detail
(except
STS-7)

STS-7

Black
in STS-7

STS-4
Fuel lines
are white

Back



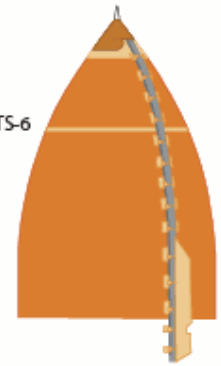
External Tank - Solid Rocket Booster Markings Stack #1B



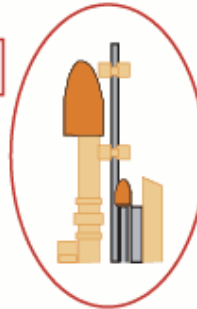
Note cone detail

Missions flown:
1983: STS-6, STS-8

STS-6



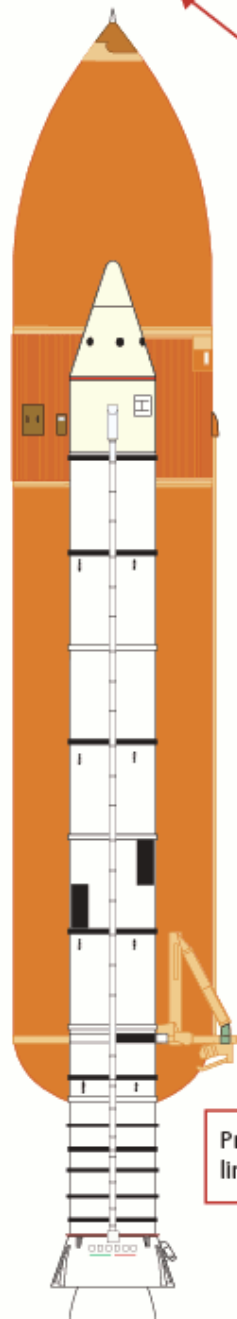
Note detail of fuel lines



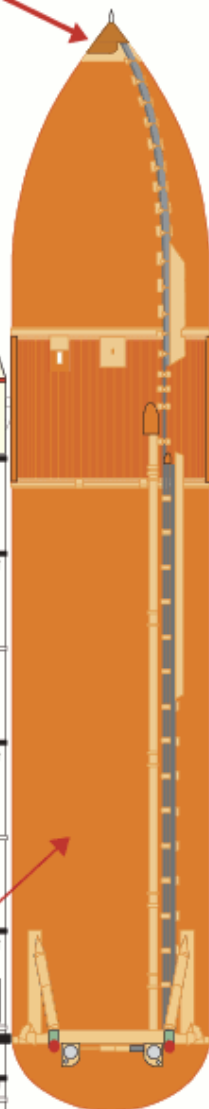
Intertank
modification
(inner section)

LWT
(Light weight tank)

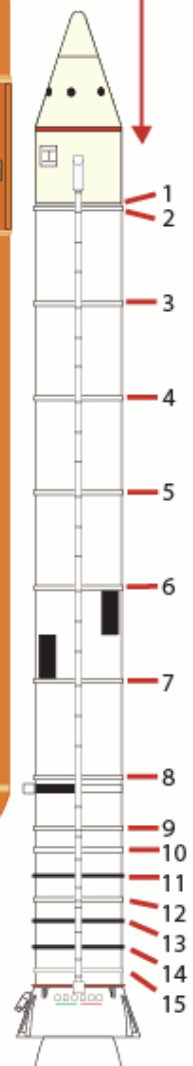
STS-6
Stripe pattern



Pressurization
line removed



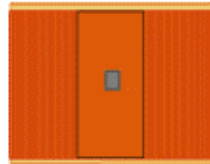
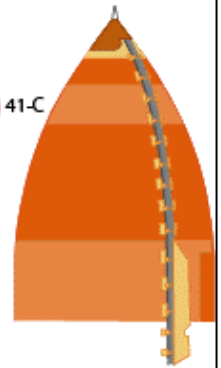
12
(White stripe
on STS-8)



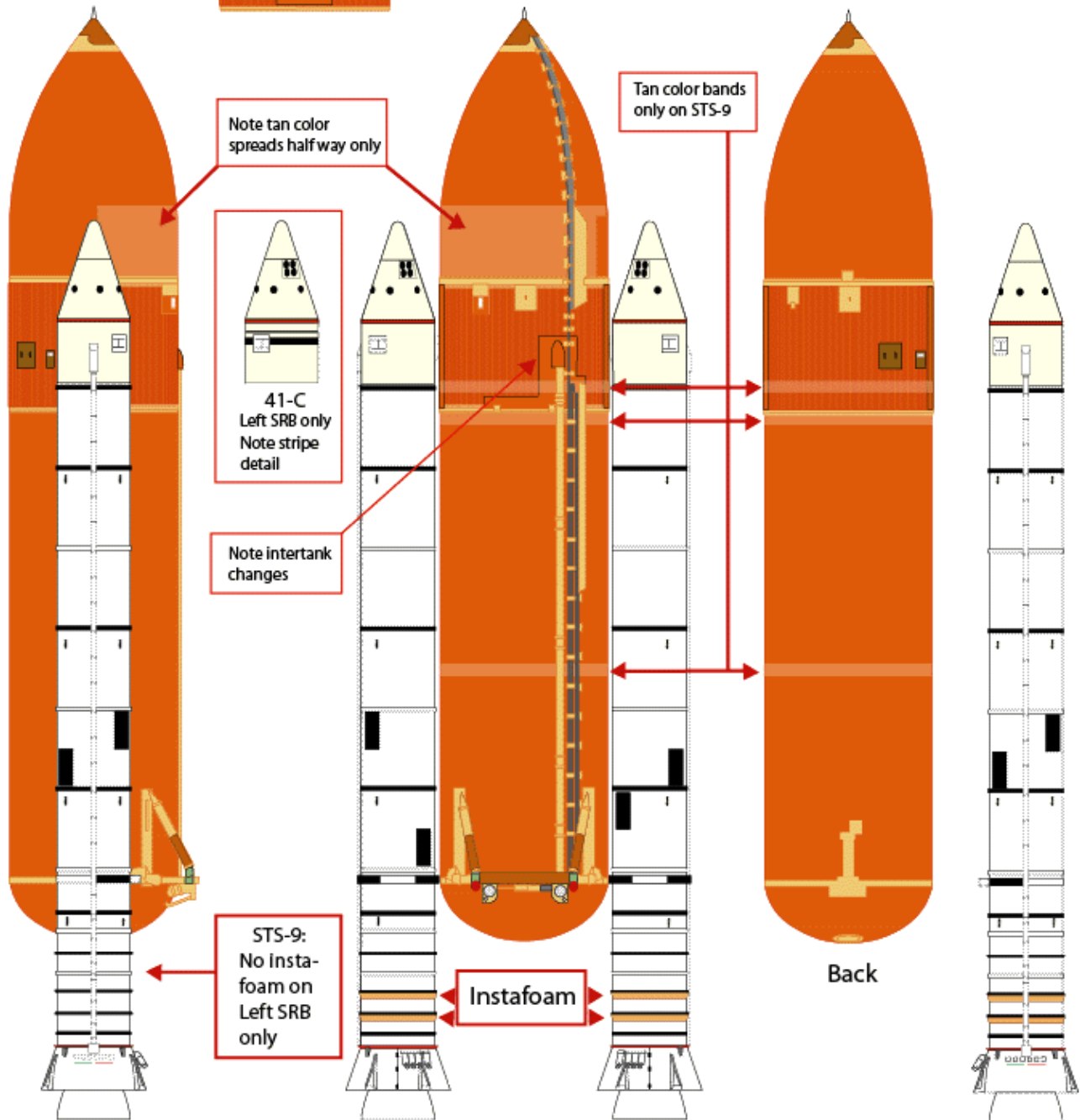


External Tank - Solid Rocket Booster Markings Stack #1C

Missions flown:
1983: STS-9
1984: 41-B, 41-C



Note position of "LOADED" markings.
Applies only to 41-B and 41-C.
STS-9 "LOADED" pattern identical as STS-2





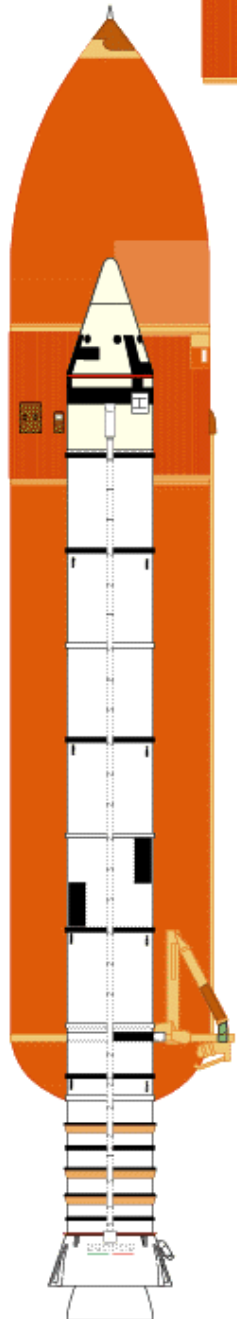
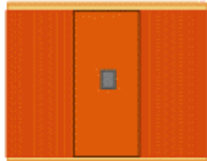
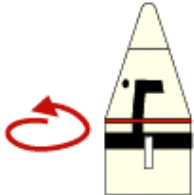
External Tank - Solid Rocket Booster Markings Stack #2

Bipod design:
22-30 degree angle (51-A through STS-75)

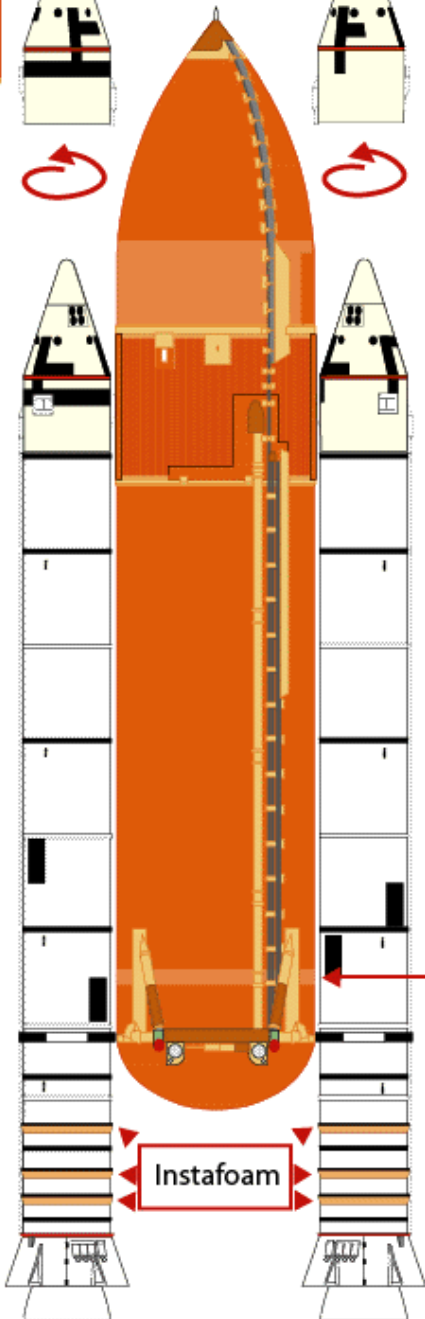
Note detail of SRB markings
and angles

Note position of "LOADED"
markings on SRB's

Missions flown:
1984: 41-D, 41-G, 51-A
1985: 51-C



SRB's cone
pattern
modified



Back

Tan color band
on 41-D only

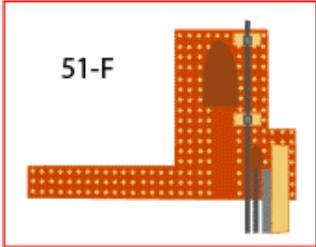


External Tank - Solid Rocket Booster Markings Stack #2A



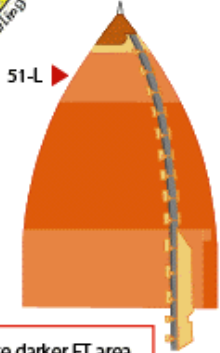
51-J

Missions flown:
 1985: 51-D, 51-B, 51-G, 51-F, 51-I, 51-J, 61-A, 61-B
 1986: 61-C, 51-L
 1988: STS-26

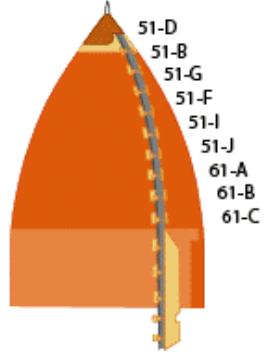


51-F

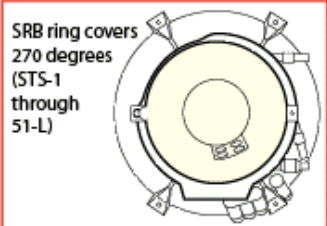
Systems Tunnel
 modification:
 STS-26 only



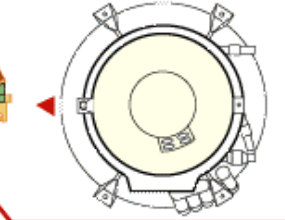
Note darker ET area
 below Intertank.
 Only for STS-26



Black
 rectangles
 on SRB's
 removed

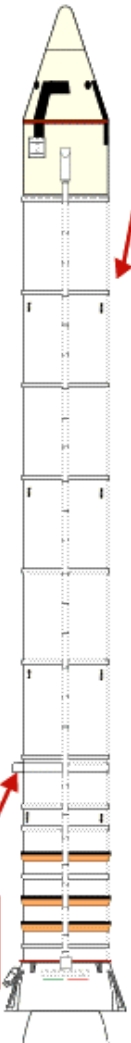


SRB ring covers
 270 degrees
 (STS-1
 through
 51-L)



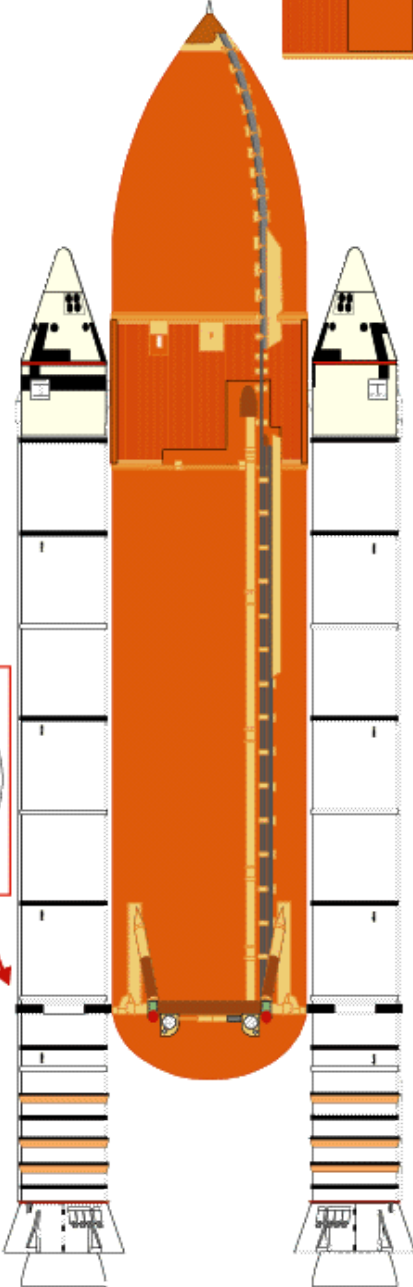
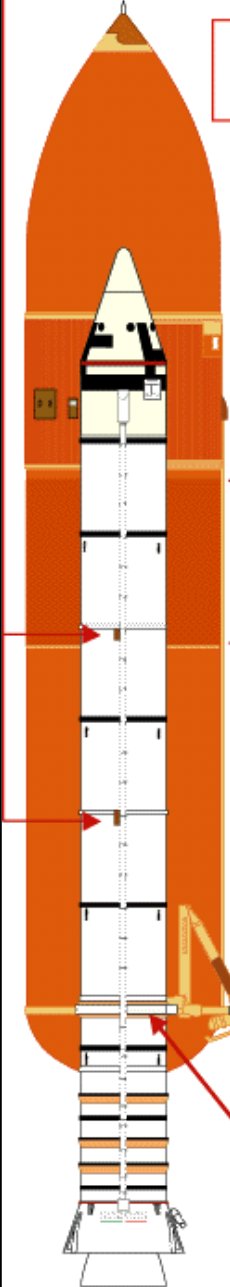
Starting with STS-26,
 SRB attachment ring encircles
 the SRB casing completely
 360 degrees and has instafoam
 installed on both SRB's.

51-L
 (Stripe pattern
 both SRB's)
 No black stripes



Back

On 51-L only, both SRB
 attachment rings are white,
 no instafoam yet.



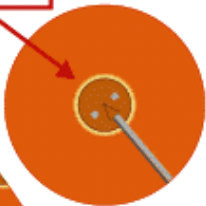


External Tank - Solid Rocket Booster Markings

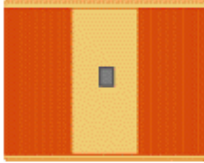
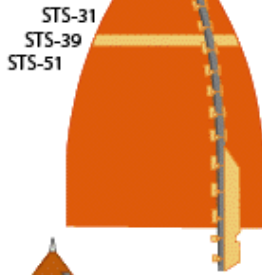
Stack #2B

Missions flown:
 1988: STS-27
 1989: STS-29, STS-30, STS-28, STS-34, STS-33
 1990: STS-32, STS-36, STS-31, STS-41, STS-38, STS-35
 1991: STS-37, STS-39, STS-40, STS-43, STS-48, STS-44
 1992: STS-42, STS-45, STS-49, STS-50, STS-46, STS-47, STS-52, STS-53
 1993: STS-54, STS-56, STS-55, STS-57, STS-51, STS-58

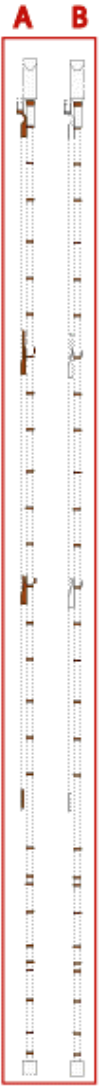
Nosecone color changed



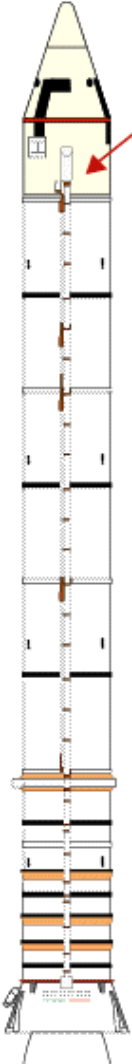
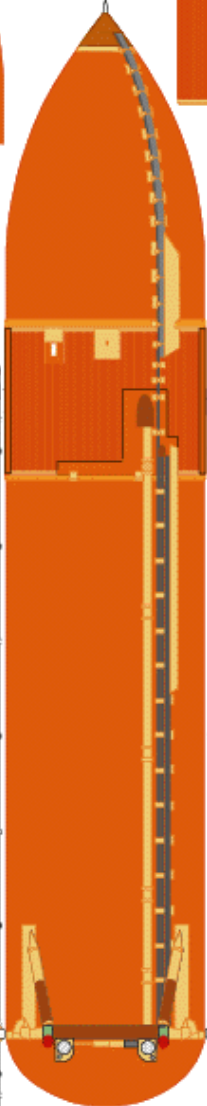
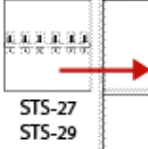
Note position of "LOADED" markings



Note SRB system tunnel modification for STS-27 only.



Systems Tunnel configuration for Stack 2b:
A: STS-29
 STS-30
 STS-28
B: STS-34
 up to
 STS-58



Back

Note detail

Systems Tunnel markings: (Left) facing away from Orbiter. (Right) facing towards Orbiter.

L

R



External Tank - Solid Rocket Booster Markings Stack #3

Missions flown:

- 1993: STS-61
- 1994: STS-60, STS-62, STS-59, STS-65, STS-64, STS-68, STS-66
- 1995: STS-63, STS-67, STS-71, STS-70, STS-69, STS-73, STS-74
- 1996: STS-72, STS-75, STS-76, STS-77, STS-78, STS-79, STS-80
- 1997: STS-81, STS-82, STS-83, STS-84, STS-94, STS-85, STS-86, STS-87
- 1998: STS-89

Bipod design:
22-30 degree angle with different
geometry (STS-76 through STS-107)

Bipod color changed to
pale red color

STS-86

STS-89

STS-83

STS-62

STS-85

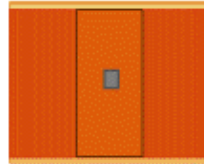
STS-73
STS-75
STS-80
STS-87

STS-89

SRB's cone
pattern
modified
(red stripe)

Note intertank
changes

Note position
of "LOADED"
markings



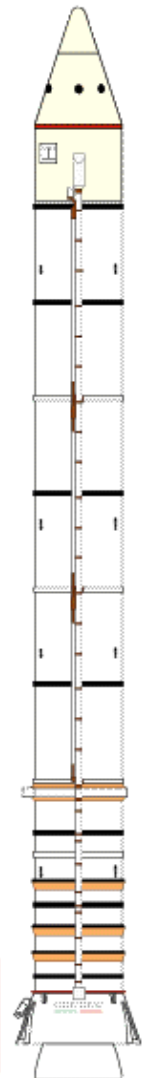
STS-77



Back

Note Systems Tunnel
configuration for
Stack 3

ET "manhole" access





External Tank - Solid Rocket Booster Markings Stack #4

Missions flown:

1998: STS-90, STS-91, STS-95, STS-88

1999: STS-96, STS-93, STS-103

2000: STS-99, STS-101, STS-106, STS-92, STS-97

2001: STS-98, STS-102, STS-100, STS-104, STS-105, STS-108

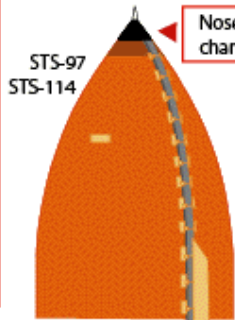
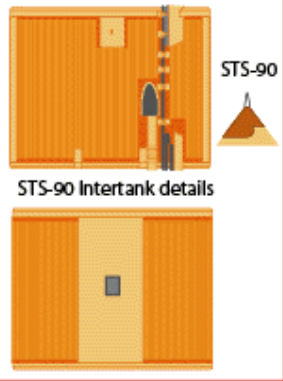
2002: STS-109, STS-110, STS-111, STS-112, STS-113

2003: STS-107

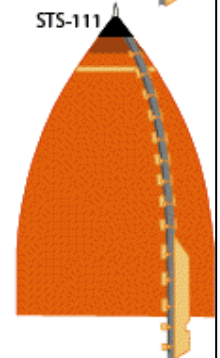
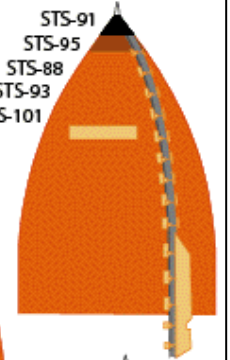
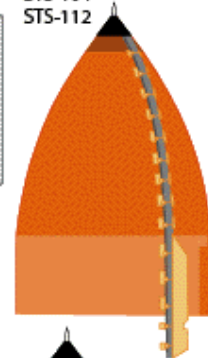
2005: STS-114*

STS-96
STS-103
STS-106
STS-102
STS-104
STS-112

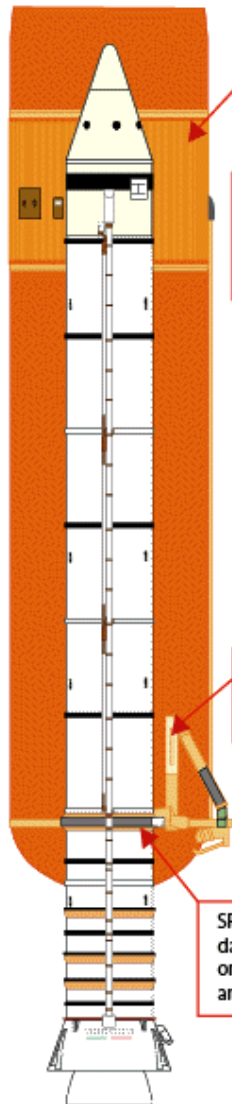
STS-91
STS-95
STS-88
STS-93
STS-101



SLWT started with STS-91



SLWT (Super light weight tank)



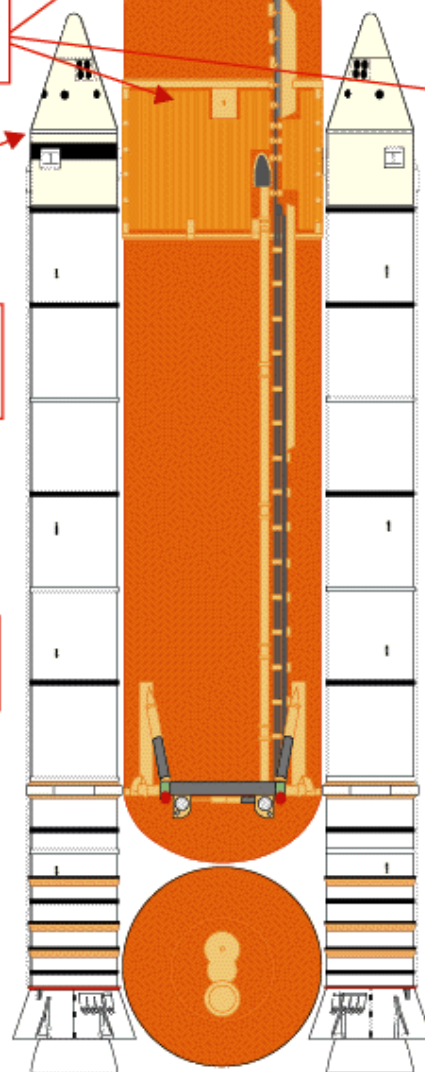
Intertank modification, lighter color, note all details

SRB's cone pattern modified (white stripe)

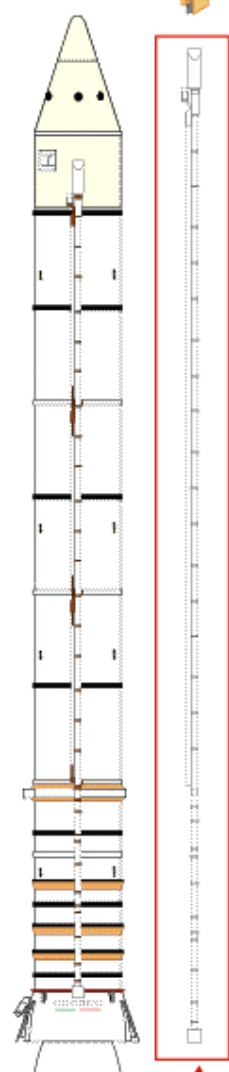
Bipod foam removed on STS-114*

Half of support is light cream on STS-114

SRB ring is dark gray on STS-107 and STS-114



Systems Tunnel configuration for STS-114 only



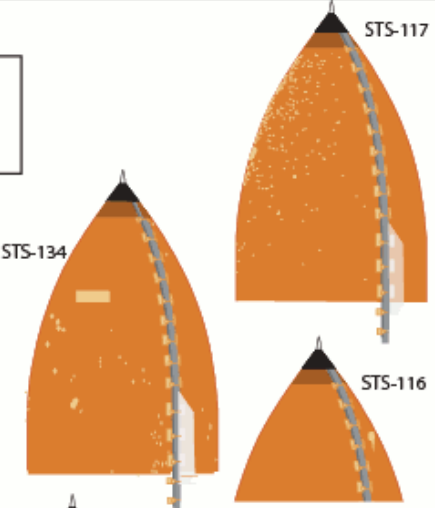


External Tank - Solid Rocket Booster Markings Stack #5

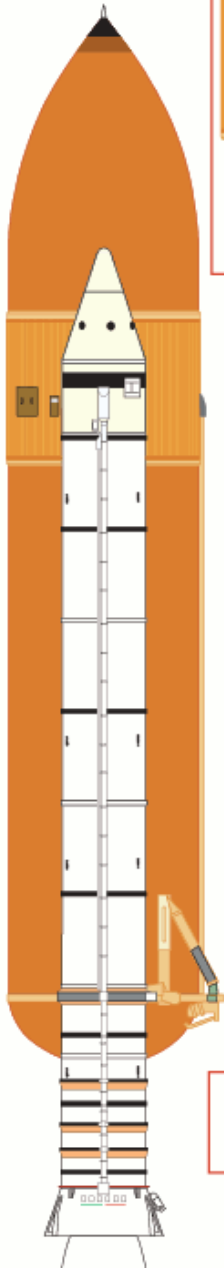


Missions flown:
2006: STS-121, STS-115, STS-116
2007: STS-117, STS-118
*2011: STS-134

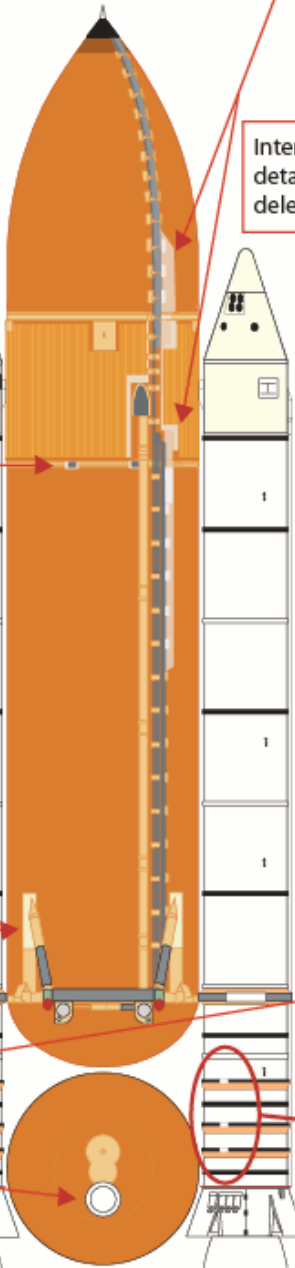
ET modification: PAL ramps removed
but footprints still can be seen



ET-122 for STS-134 was repaired after hurricane Katrina. A commemorative logo was added to the interstage panel door on the ET.



Bipod modification



Interstage detail deleted



Back

Note lighter color tones

Note color for STS-117

Right srb ring is white on STS-118

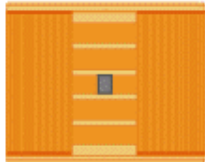
Note details on SRB's (same details are seen on back of SRB'S) Changes also apply to STS-114



External Tank - Solid Rocket Booster Markings Stack #5A

STS-122

Missions flown:
2007: STS-120
2008: STS-122



STS-120 only

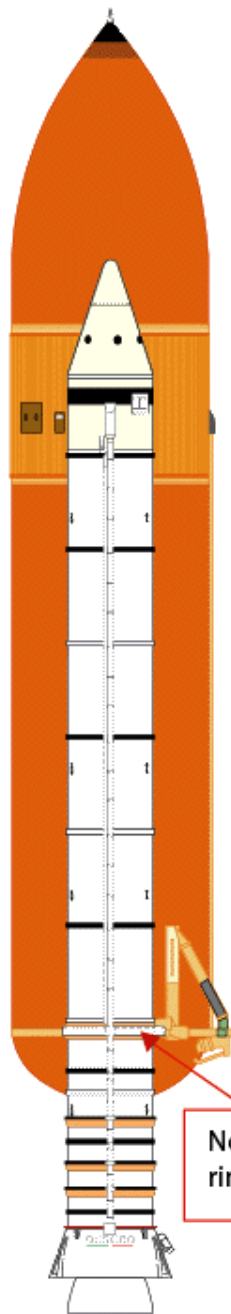


LH2 PAL ramp
footprint deleted

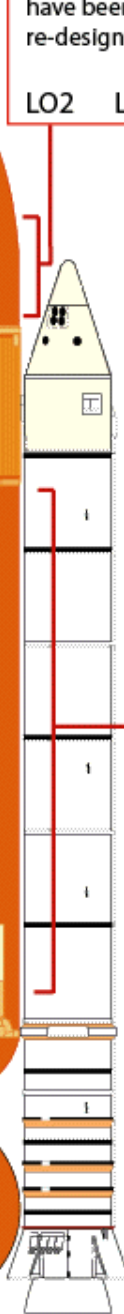
ET modification:
Ice/Frost ramps
have been
re-designed.

LO2 LH2

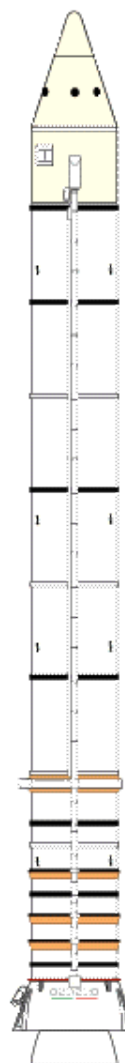
STS-120



Note SRB
ring is white



Back





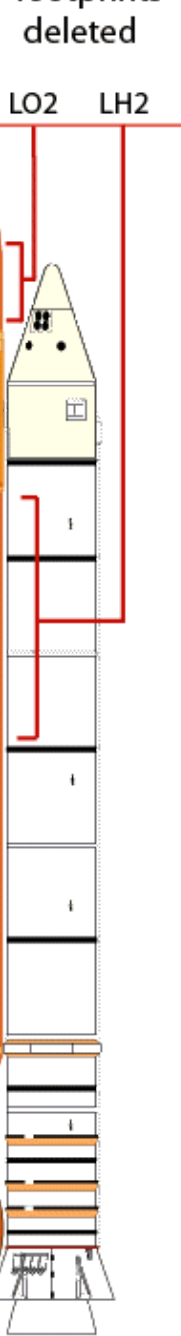
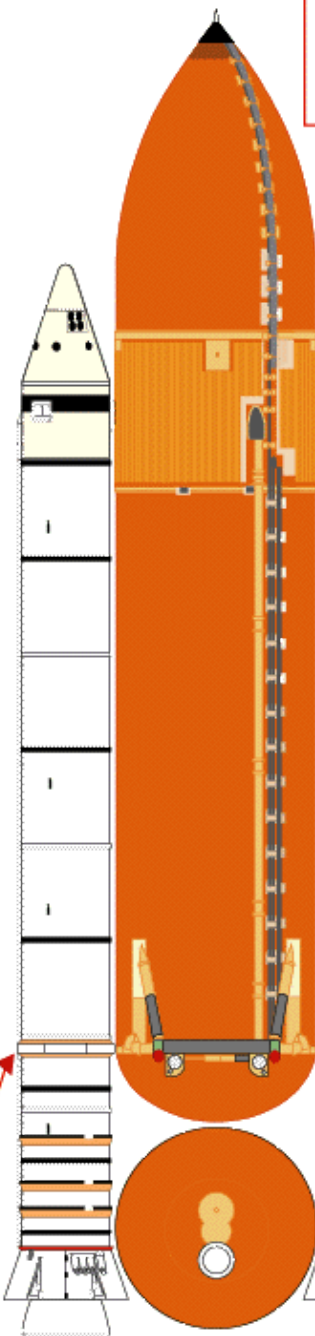
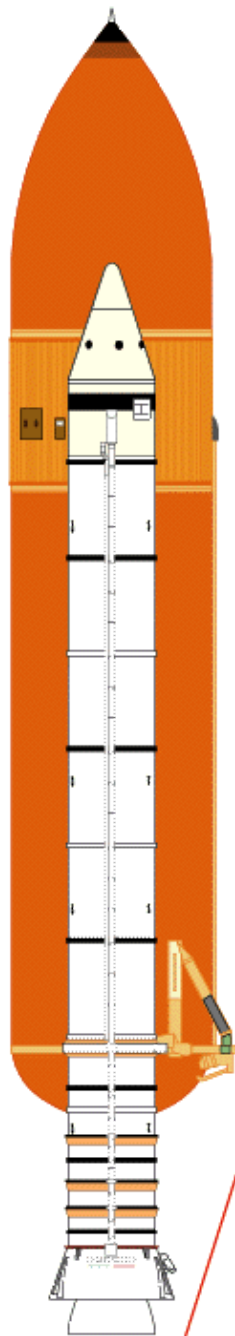
External Tank - Solid Rocket Booster Markings
Stack #6

Missions flown:
2008: STS-123, STS-124

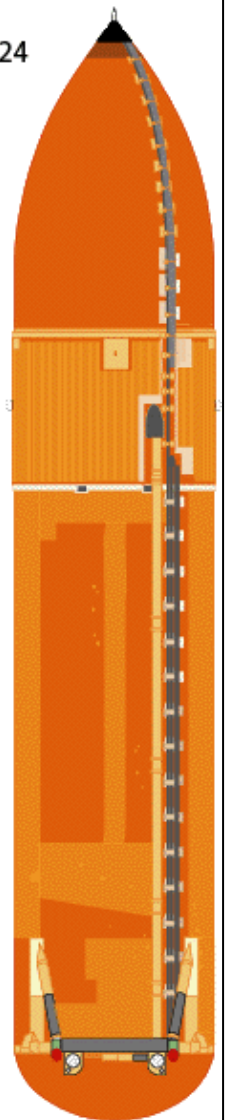
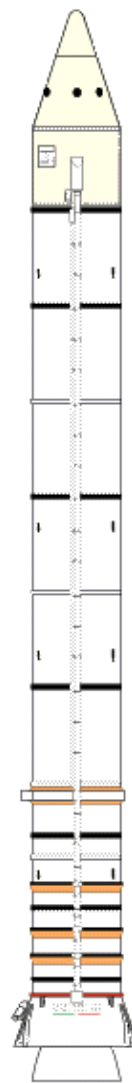
STS-124



PAL ramp
footprints
deleted
LO2 LH2



Back

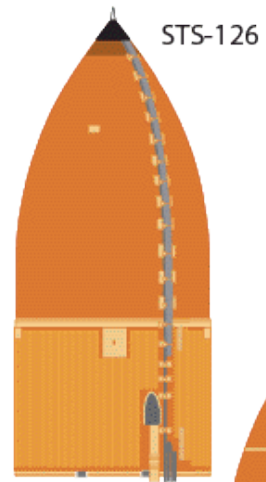
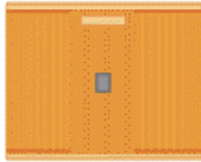


Note SRB ring is white

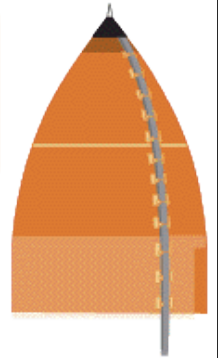


External Tank - Solid Rocket Booster Markings Stack #6A

Missions flown:
2008: STS-126
2009: STS-119, STS-125, STS-127, STS-128, STS-129
2010: STS-130



STS-127

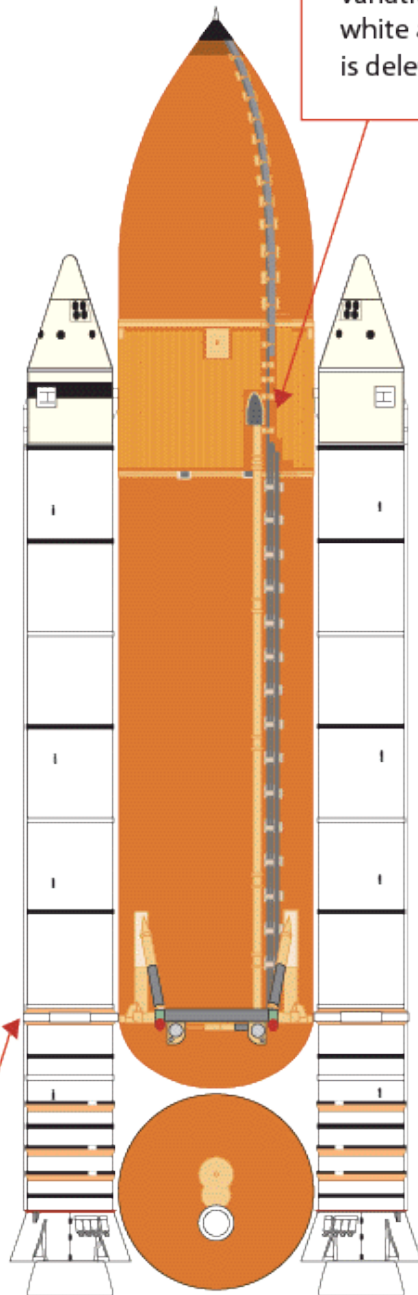
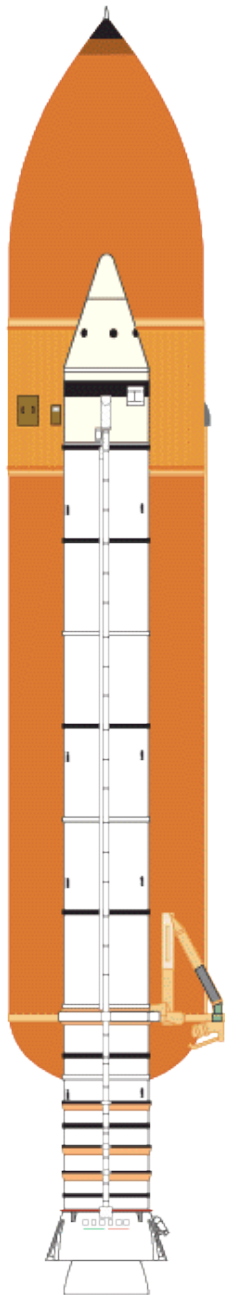


Intertank
variation:
white area
is deleted

Back
Panel removed



STS-128
STS-129
STS-130

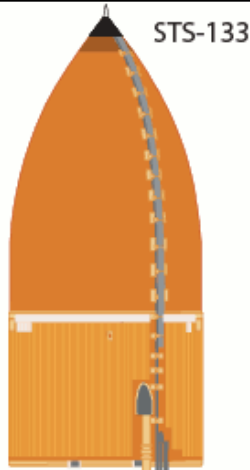


Note SRB ring is white

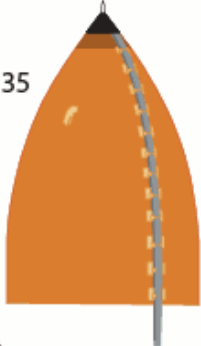


External Tank - Solid Rocket Booster Markings
Stack #6B

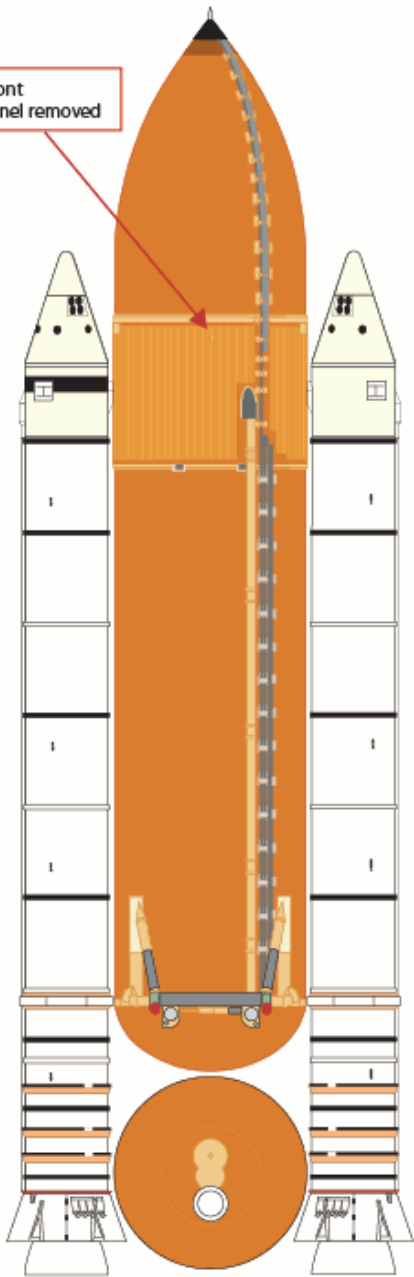
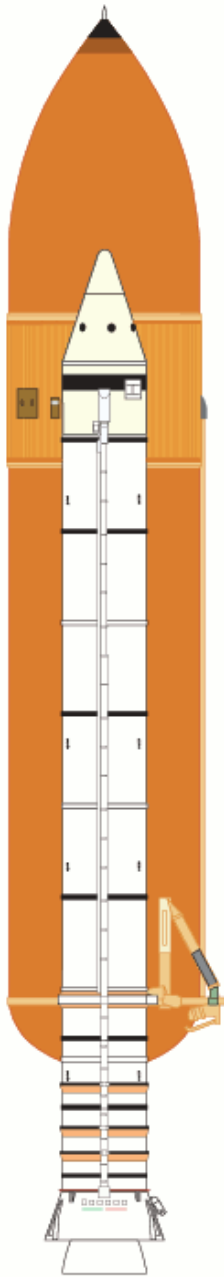
Missions flown:
2010: STS-131, STS-132
2011: STS-133, STS-135



STS-135



Front
Panel removed



Back

STS-135 panel
door painted
black.



References

Space in Miniature #3 - "Space Shuttle" by Michael J. Mackowski

Space Shuttle - The History of the National Space Transportation System, The First 100 Missions by Dennis R. Jenkins

Squadron/Signal Publications #20 - "Walk around Space Shuttle"

http://www.capcomespace.net/dossiers/espace_US/shuttle/index.htm

The Space Shuttle Operator's Manual - Revised Edition

NASA / KSC Media gallery photos