SPACEFLIGHT

Sharman mission faced

post-launch abortion

BY TIM FURNISS

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he Soyuz TM12 mission,
launched from Baikonur on
18 May with two Soviet cosmo-
nauts and the UK's first astro-
naut, Helen Sharman, was
almost aborted on reaching
orbit.
Sharman has revealed in an
interview with Flight Interna-
tional that, during the nine-
minute launch sequence, ground
control monitored a continuous
Imm/min increase in cabin pres-
sure, and were prepared to order
an immediate emergency depres-
surisation and return to Earth
when TM12 reached orbit.

The onset of weightlessness is
believed to have freed whatever
obstacle caused the pressure
rise, however, and the cabin
pressure reverted to normal. The
cabin is pressurised by atmos-
pheric air at normal atmospheric
pressure.
Sharman and her colleagues,
Sergei Krikalyov and Anatoli
Artsebarski, were unaware of the
problem during launch — al-
though cabin instruments moni-
tor pressure. The crew moni-
tored the cabin pressure before
taking off their helmets and
proceeding with a normal two-
day flight to rendezvous and
dock with the Mir space station.
Because TM12 was to dock at
a forward port at Mir following
a rendezvous antenna problem
at the aft port, mission managers
considered a manual docking to
be mandatory and planned to
replace the rookie, Artsebarski,
with his experienced backup,
Alexander Volkov.

Under usual Soviet practice,
this would have meant TM12
would also be flown by the other
backups, the UK's Tim Mace and
flight engineer Alexander Kaleri.
Instead, it was decided to at-
tempt a routine automatic dock-
ing using the dual-radar Kurs
system; but when one of the
radars failed, Artsebarski had to
make a manual docking.
Artsebarski and Krikalyov jet-
tisoned the Progress M8 tanker

craft from Mir on 16 August.
The next mission to Mir, by
Soyuz TM13, crewed by Volkov,
Takhtar Aubakirov and Austrian
Franz Fibek, is scheduled for 2
October.
• A US instrument, the Total
Ozone Mapping Spectrometer
(TOMS), has been launched
aboard a Soviet Meteor 3 satel-
lite. The launch of the Tsyklon
booster from Plesetsk on 15
August was "the biggest US-
Soviet project since the Soyuz-
Apollo mission in 1975", says
Tass. •

NEWS IN BRIEF

ZENIT DELAYED
The 27 July launch from the
Baikonur cosmodrome of the
first Zenit booster to fly in 15
months was postponed "at the
last minute", according to the
Soviet newspaper, Red Star.
The booster carried an elec-
tronic intelligence satellite —
described by the Soviets as
"...a military technology satel-
lite to verify the fulfilment of
disarmament treaty commit-
ments". The last Zenit ex-
ploded above the launch pad,
3s after lift off, on 4 October,
1990.

GALILEO FAILURE
The cooling manoeuvre per-
formed by NASA's Galileo
spacecraft earlier this month
failed to release the ribs of the
high-gain antenna which ap-
pear to have been bound by
friction to the antenna's con-
trol tower. Another manoeu-
vre will be performed in
December when Galileo is
further from the sun and the
temperatures are lower. Gali-
leo is scheduled to fly by the
asteroid Gaspra on 29 Octo-
ber. The high-gain antenna is
not essential for this part of
the mission, but it certainly
will be vital to the spacecraft's
success when it reaches the
planet Jupiter in December
1995.

SPACELAB D2 PAYLOAD TRAIN COMPLETE
The payload train of experiment racks for the German-funded Spacelab D2 mission aboard the Space Shuttle Endeavour STS55 has been completed at the DASA Space Systems MBB plant at Bremen. The racks will be shipped to the Kennedy Space Center later this year. The nine-day Spacelab D2 mission, scheduled for February 1993, will be dedicated to microgravity research, materials sciences and biotechnol-ogy experiments for German, European Space Agency and US users. The Endeavour will be manned by seven crew, including two German payload scientists who will be selected in October from Ulrich Walter, Gerhard Thiele, Hans Wilhelm Schlegel, and Renate Brummer.

NASA sets up ten-month NLS study
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ockheed Missiles and Space,
McDonnel l Douglas and
TRW have been selected by-
NASA to complete a ten-month,
$500,00*Q study to support the
definition , of the new National
Launch System (NLS).
NASA and the US Air Force
have been studying various op-
tions for vehicles and engine
systems for the past three years
under the Advanced Launch Sys-
tem and Shuttle C programmes.
The NLS is seen by NASA as
a basic core vehicle to which
modifications, such as strap-on
boosters, can be added to suit

individual launch requirements.
The vehicle could provide the
heavy lift capability to support
Space Station Freedom.
The US Government expects
full-scale development oi the
NLS by 1995, with a first flight
at the turn of the century.
Lockheed's NLS director, Jim
Madewell, says: "A new launch
system is required because all of
the launch capacity the USA
now depends on is derived from
ballistic missiles of the 1970s.
The fundamental objective of
NLS is to minimize the opera-
tional problems." •

Damage hits switched-on Shuttle
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wo of the three fuel cells on
the Space Shuttle Atlantis
were left operating after its land-
ing at the Kennedy Space Center
on 11 August, causing as much
as $7 million in damage, says
NASA. A board of inquiry has
been set up.
The cells have been returned
to the International Fuel Cells
division of United Technolgies,
and new ones installed ready for
the Shuttle's flight in November.
The incident occured when an
emergency power-down of the
orbiter was ordered once the
crew had egressed, alter engi-

neers noticed a decreased volt-
age in the power plants.
Two cells were inadvertently
left connected to their power
buses, because the power-down
was not provided with the usual
ground electrical services and
there was insufficient internal
power to complete the cell shut-
down process. The cells contin-
ued to operate unnoticed on low
power.
• The Countdown Demonstra-
tion Test for the STS48 Discov-
ery mission, scheduled for 12
September, took place on
20 August. •

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