OPERATIONS: SPACEFLIGH T

Soviet cosmonaut logs

record 541 space days

BY TIM FURNISS

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Manarov, flight engineer of
the Soyuz TM11 which returned
to Earth on 26 May with com-
mander Viktor Afanasyev and
British astronaut Helen Shar-
man, has amassed a record 541
days space experience.
The 175-day Soyuz TM11
mission aboard the Mir space
station by Manarov and Afa-
nasyev was the seventh-longest
manned spaceflight. Manarov
also flew as flight engineer on
Soyuz TM4, which recorded the
longest manned spaceflight of
365 days 22h 39m between
1987-8, also on Mir. Twenty-
eight Soviet cosmonauts have
amassed over 100 days space
experience each compared with
the 84-day record of three US
astronauts in 1973-4.
Of the Soviet cosmonaut
corps, eight have logged over
200 days in space, six 300 days
plus and one more than 400
days, as well as Manarov's 500
day-plus mark. Sixteen Soviet
missions have now exceeded the
US 84-day Skylab flight time.

Sharman's personal success
during her almost eight-day
Juno mission, launched on
Soyuz TM12, was not matched
by the Juno organisation in
ensuring British scientific par-
ticipation.
Alexei Leonov, deputy chief
of the cosmonaut detachment
says: "I'm afraid that this has
not added to the prestige of our
space research programme al-
though Helen did of course
work magnificently and showed
herself to be a really grand lass".
As a commercial mission it

generated only $1.7 million for
the Soviet Energia organisation,
compared with the $12 million
to $25 million paid by other
countries such as France and
Germany.
"We took the right decision
to fly Juno irrespective of
whether we have all the com-
mercial advantage, not only for
the sake of politics but also for
good relations," a Soviet space
official says.
Leonov has also revealed that
valuable ecological data col-
lected by instruments aboard
the Mir space station were lost

Insurance claims mount GTE Spacenet's ASC 2 com-

munication s satellite,
launched by a Delta on 12
April, has lost three of its six
Ku-band transponders. The
company intends to claim up to
$16 million insurance for the
partial satellite loss.
The satellite, which also has
18 C-band transponders, pro-
vides services to all 50 US states
and Puerto Rico. The company
discovered the problem during
in-orbit checkout, when a lower
than required power output in
the three transponders was
monitored.
GE Astro Space, the satellite's
builder, is investigating the
problem and "...it is unlikely
that the transponders will be
usable", says GTE Spacenet.

This partial satellite loss will
mean that claims on the space
insurance market in the last 16
months could total more than

$730 million. Japan's BS2X and
BS3H were lost in Ariane and
Atlas failures. The country's
BS3a is also a partial loss after
electrical problems.
Another Japanese satellite,
Superbird B, was lost in the
Ariane failure. Superbird A was
rendered inoperable by a
thruster failure and the French
TDF 1 and Indian Insat ID
satellites have been classed as
partial losses.
Canada's recently launched
Anik E2 could also be a classed
as a total loss if the C-band
antenna-deployment problem
cannot be overcome. •

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British cosmonaut Helen Sharman is helped down from Soyuz TMl 1

when the recoverable capsule
attached to the unmanned Pro-
gress M7 spacecraft failed to be
recovered after its re-entry last
month. It was the second recov-
erable capsule flown on a Pro-
gress mission. The first was
recovered successfully.
Soyuz TM12 commande r
Anatoli Artsebarski and flight

engineer Sergei Krikalyov,
meanwhile, plan to remain on
board Mir until 10 October.
They will be replaced by the
Soyuz TMl3 crew, Alexander
Volkov and Alexander Kaleri,
who will be flying a commercial
cosmonaut, Austria's Franz
Fiebek, for a six-day stay on the
space station. D

Modifications delay Ariane launches A

riane launches have been
delayed until at least mid-
July by the need to modify the
hydrogen feed line on the third-
stage engine of the Ariane 4
vehicle and to conduct qualifi-
cation tests.
The problem emerged during
the V39 mission last April when
there were variations in pres-
sure in the feed line, which
were also noticed on a ground-
test engine.

Arianespace and French space
agency CNES decided to modify
the component and submit the
engine to qualification test at
manufacturer SEP's Vernon
plant before committing further
vehicles to flight.
As a result, the European
Space Agency's remote-sensing
satellite, ERS 1, which was
scheduled to have been
launched on Ariane V40 last
month, will be delayed. •

Bush blocks US launches in China

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resident Bush has decided to
block US companies from
participating in further satellite
launches with the People's Re-
public of China because the
country is believed to be trans-
ferring M-l l ballistic missile
technology to Pakistan.
His decision, if ratified by
Congress, could halt the Long
March 2E launches of the US-
built Australian Aussat 2 com-
munications satellites. The Pres-

idential decree could also
thwart plans by a US company,
Alpha Lyracom, to negotiate
cut-price Long March launches
of follow-on satellites to Pan-
amsat 1.

China has already lost two
commercial launches it thought
it had negotiated successfully.
Indonesia's US-built Palapa B4"
will fly a US Delta and the
partly US-built Arabsat 1C will
fly Ariane. D

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