SPACEFLIGHT

Europe offered mini-spacelab
PRESTON

A space recovery vehicle
(SRV) based on General Elec-
tric's US photo-reconnais-
sance film re-entry capsule is
being marketed to micro-
gravity users as an autono-
mous, low-cost alternative to
recovering and delivering
materials processing systems
from orbit to the user, reports
Tim Furniss.

NIS Space has an agree-
ment with GE to market,
build, and launch SRVs for
Europe and Scandinavia
while GE markets its vehicle
in the USA, appointing
companies like NIS Space to
handle marketing elsewhere
in the world.

Flight understands, but NIS
is unable to confirm, that
ESA, like Nasa, has shown
interest in the SRV as an
emergency vehicle for space
station crew recovery and as
an alternative to Shuttle free-
flyers such as Eureca. It is
known that Nasa is conduc-
ting a review of possible
emergency vehicles that could
be incorporated into the base-
line design of its Space
Station.

NIS Space says that inter-
est in the SRV in Europe as a
materials processing labora-
tory is "absolutely phenom-
enal", and the company is
reviewing all the launch
options including low-cost,
low-Earth-orbit boosters such
as the US Scout, Conestoga,
and Amroc, as well as riding
piggyback on Ariane.
NIS expects to make a
major announcement on the
SRV programme, including a
launch service agreement,
customer service and pricing
policy in mid-December. NIS
will either lease flight time on
an SRV or will sell it to a
customer. So far, 38 custom-
ers have expressed a firm
desire to fly experiments.
The major market for the
SRV is in providing a unique
environment for materials
processing experiments to be
carried out on unmanned,
booster-launched, automated
mini-labs, capable of
returning materials to Earth
at short notice, within hours
rather than weeks for a
Shuttle-retrieved free-flyer.
NIS would tailor the SRV to
the user's exact requirements,

RETRO-ROCKET

THRUST CONE

HEAT
SHIELD

INNER
-RECOVERABLE
CAI'SULE

-PROGRAMMER

SPACE STATION,
SHUTTLE OR EXPENDABLE VEHICLE
LAUNCHED

Q±b

SEARCH AND ATTITUDE
STABILIZATION

RETROFIRETO
DEORBIT

REENTRY ORIENTATION
AND STABILIZE

SRV
PARACHUTE
DEPLOYMENT

SRV
CONTROLLED
TERMINAL DESCENT
AND RECOVERY

General Electric's
proposed space
recovery vehicle
(SRV) is based on
its recoverable film
re-entry capsule for
US military photo-
reconnaissance
satellites. SR V is
being marketed in
Europe by
Lancashire-based
NIS Space, which
reports
"phenomenal
interest" in the
device as a low-cost
laboratory for
microgravity
research

retaining confidentiality.
Users who have shown inter-
est include those involved in
pharmaceuticals, genetic
engineering, organic crystals,
thin films, and lubricants.
Apart from being an emer-
gency re-entry vehicle for a
space station crew, an SRV
could be used to return mate-
rials processing samples from
the space station, or astro-
nauts' blood samples, and
even serve as a waste manage-
ment vehicle for the station.

The optimum size of the
SRV is being decided. User
interest indicates that
capsules between 76cm and
152cm base diameter will

become standard. These
would weigh about 600kg with
experiments. As an "austere
last-resort lifeboat" for up to
six crew wearing pressure
suits and emergency oxygen
the SRV would weigh about
35,000kg and measure 3m in
diameter.

Deploying a parachute at
16,000m, the SRV makes a
controlled landing within a
15m-radius target. It can be
refurbished in days and fly
up to 100 missions, each
usually lasting about a week.
The film-return capsule on
which it is based has made
more than 500 returns from
orbit.

More

Cosmos

launches
MOSCOW

The Soviet Union launched
two more Cosmos satellites on
October 31 and November 4
respectively. Cosmos 1789
and 1790 bring the number of
satellites launched by the
Soviets this year to 91 in 75
launches. This compares with
16 launched by the rest of the
world in ten successful
launches.

On October 3 Cosmos 1731,
a fifth-generation photo-
reconnaissance satellite, was
deorbited after a lifetime of
238 days, the longest oper-
ating time of any Soviet
observation satellite, space
analyst Phillip Clark tells
Flight. Clark believes that the
triple launch of Glonass navi-
gation satellites Cosmos
1776-1780 on September 16
could have been made by an
operational medium-lift
launch vehicle or, as usual, by
a Proton, but flying a differ-
ent profile.
The Soviets have
announced that the flight by a
Bulgarian cosmonaut to the
Mir space station will take
place in 1988. Frenchman
Jean Loup Chretien's Mir
mission the same year has
been codenamed Aragats,
after the highest peak in
Soviet Armenia. The manned
Syrian Intercosmos flight to
Mir will take place in 1987.
Meanwhile, Soviet trade
agency Litsenzintorg has
"started negotiations" on the
commercialisation of the Pro-
ton launcher, claiming that
companies in more than 20
countries, including Britain,
Belgium, Italy, France, and
Finland have expressed inter-
est.
Thailand is the latest coun-
try to show interest in the
Proton. The Soviets have
offered to launch a US-built
RCA communications satel-
lite for Siam Satellite, empha-
sising that production tech-
nology secrets will be
guaranteed. As far as Western
countries and companies are
concerned, however, the
' danger of state-of-the-art
technology transfer will
forever prevent the use of
Soviet launchers.

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