

Why red flag is not marooned in space

REPORTS in the Western press that Soviet cosmonauts aboard the Salyut-7 orbiting laboratory are "marooned in space" or awaiting a rescue bid from the US's space shuttle are wildly exaggerated. Vladimir Lyakhov and Aleksandr Aleksandrov are safe and well—if a little delayed.

While NASA has been trying to persuade President Reagan to fund a permanent manned outpost in orbit for the 1990s, the Soviet Union has been pressing ahead to achieve the same goal in 1983, using the Salyut space station in conjunction with Soyuz-T ferry spaceships, Progress robot cargo freighters and a new craft called Star that can act as freighter, space "tug" or an extra laboratory module.

But Russian attempts to keep their station permanently manned have hit trouble all year. In April, cosmonauts Vladimir Titov and Gennady Strekalov had to abandon their attempt to reach the station when the rendezvous radar on their Soyuz craft was damaged during launch.

In June, Lyakhov and Aleksandrov reached the station aboard Soyuz T-9. They were due to be relieved and return to Earth earlier this month. But again the jinx surrounding Titov and Strekalov struck. The two cosmonauts, who were set to be the relief crew, barely escaped with their lives when, instead of lifting them off their launch pad, a booster rocket caught fire and exploded. An emergency escape system saved the cosmonauts by rocketing their spaceship away from the carrier rocket as soon as the fire was detected.

News of the disaster at the Baykonur Cosmodrome set off rumours of serious problems on Salyut itself, including failures in the station's rockets and life support system. Last weekend's arrival of a Progress unmanned freighter at the station set the rumours in large headline type. In fact, the Soviet Union has frequently sent up a robot freighter to supply crews that have been in space for more than four months, as a safety precaution against the failure of



In training for a permanent place in space

onboard systems.

Lyakhov and Aleksandrov now have supplies for two more months—long enough to stay in space until the next likely landing "window" at the end of November. (Soviet manned launches and landings only occur when it is light over both the landing site in Kazakhstan and the point of retrofire over the Atlantic.) If the Salyut crew stays in orbit for another month, that would allow the Soviet Union to recover its schedule for the permanent manning of Salyut and press ahead with the launch of two visiting crews for eight-day missions early next year. One of those missions will include the third Soviet woman cosmonaut, the other will carry Rakesh Sharma, the first Indian spaceman.

Safety chaos in Australian laboratories

THE DEATH from melanoma of an Australian biochemist earlier this year, has sparked off extraordinary revelations about health and safety hazards at the nation's laboratories. A new study into the establishments run by CSIRO, Australia's principal public research organisation, has found deplorable standards at many laboratories. Accidents, it has discovered, cost CSIRO A\$4.5 million a year—more than 1 per cent of the annual research budget.

Dr Ron Mergamasco died in December last year. He left a tape recording listing numerous accusations about safety at the Fishermen's Bend laboratories at Melbourne, where he worked in the applied organic chemistry division. A government inquiry cleared the laboratory of causing his death. But it found that there were cancer-causing agents loose in the lab, and no monitoring of the contamination.

The inquiry reported that, if the wind was in the wrong direction while distillation and filtration work was in progress, the

whole building could be filled with dangerous fumes. The report said that the building was overcrowded, with cylinders of industrial gases littering the corridors.

Now the story of inadequate buildings, outdated equipment and unsafe working conditions has been found to be repeated at a large number of CSIRO's 100 laboratories. A new study commissioned in the wake of the Mergamasco case recommends extensive changes, including a biomedical data bank of staff health.

"We saw working environments which are both hazardous and unhealthy and where there appeared to be no prospect of improvement," the report says. Fume cupboards were placed next to air conditioning vents. Refrigerators stored chemical reagents and specimens as well as food for staff.

At a station for the mass-rearing of sheep blow flies, it was impossible to keep staff isolated from flies that were being reared on putrid meat. Allergies were rife at the station.

Italy bags fusion project

ITALY is to play host to Europe's next large machine to research into fusion power—taking over from Britain, which says it cannot afford to participate.

A giant fusion machine, known as the Reversed Field Experiment (RFX), will be built at the Centre for the Study of Ionising Gases, run by the Italian science research council on the outskirts of Padua. The Italian government will pay 55 per cent of the estimated £14 million bill for the machine. The European Community will pay the remainder.

The RFX is an attempt to develop a more efficient fusion machine than any so far built in Europe. It will, like Europe's JET machine which was switched on at Culham in Oxfordshire earlier this year, use a magnetic field to hold together the plasma as it is heated to the very high temperatures at which fusion reactions take place. But, unlike JET's Tokamak system, the RFX will make more efficient use of a weaker field to keep costs down. The RFX project was originally intended to be a joint effort by Britain, Italy and the Los Alamos laboratory in the US. But the UK Atomic Energy Authority withdrew late in 1981, saying that it did not have enough money to finance both JET and RFX. Britain now runs the risk of being left out of the fusion machines like JET become outmoded as the business technology advances.

Mururoa inspection

A GROUP of five scientists from Australia, New Zealand and Papua New Guinea is visiting the Mururoa Atoll in the South Pacific this week at the invitation of the French government. The scientists will inspect the French nuclear weapons test site and take samples from corals, clams and sediment on the southern and northern flanks of the atoll. The invitation has come after angry protests in Australasia about the tests (*New Scientist*, 5 May, p 273).

However, Bill Hayden, the Australian minister for foreign affairs, says the sampling will be insufficient to make any real assessment of possible leaks of radioactivity from the underground test site or from the waste dumps. He conceded that the visit would allow the three governments to obtain information previously unavailable to them. But he stressed that the sampling would be insufficient to verify French reassurances about radioactive contamination in the region. The group, headed by Hugh Atkinson, director of the New Zealand National Radiation Laboratory, will also take air and water samples and inspect equipment used by the French for monitoring radiation.

Hayden said the visit did not meet Australia's overall concerns about nuclear testing. These were based on the country's opposition to the nuclear arms race and its strong condemnation of continued nuclear testing at the atoll.

Helicopter row

HELICOPTER noise is more annoying than aircraft noise in London, according to a survey by the Civil Aviation Authority (CAA) published last week. Confusingly the survey found no difference in public reaction to helicopter and aircraft noise in Scotland, however.

The report will fuel debate at a public hearing into the renewal of the licence for British Airways and British Caledonian to operate a helicopter link between London's two airports, Gatwick and Heathrow. The hearing started last week.

The CAA survey found that the average noise from helicopters at Lower Feltham, near Heathrow, was 76 dB(A)—slightly higher than that of fixed wing aircraft at 74 dB(A). But the public seemed to notice the difference: 52 per cent thought helicopters more disturbing than aircraft, while only 26 per cent found them less disturbing. The survey found similar disturbance in Esher and Epsom, areas affected by the Gatwick to Heathrow link.