

HORSHAM AMATEUR RADIO CLUB

HARCNEWS

Coming Shortly

Mar 7th Club Evening Junk Sale

Mar 21st Social Evening Rising Sun Nutbourne

April 4th Club Evening Homebrew

March 2002

Sponsored by:



January Meeting: Video Show

We saw two videos at the Club Night: one on a launch of Ariane and the other was about a dxpedition to an island off Scotland.

These were displayed on a large screen via a projection screen. The first tape was recorded off air from satellite and was of a very high quality. However the French accents did cause a little problem especially for our members who worked for companies now owned by our French cousins!

It was very interesting to see the telemetry data during the launch, and I learnt that the rocket did not go straight up but in fact a far more complex manoeuvre was used. Once the rocket was in thin atmosphere the cowling around the payload was jettisoned to remove any unnecessary weight. Later the solid propellant boosters were discarded with explosive bolts.

The next move was to direct the

rocket downwards! This was to let gravity help accelerate the rocket to a much higher velocity, because all rockets need to reach the escape velocity in order to get into space. Once this speed had been obtained, the rocket was then pointed up again and zoomed into orbital position.

Often a rocket contains several payloads and they are spun off at the correct height for their geostationary orbital positions.

The YL in the commentary sounded very much like the girl in Robot Wars.

One of the French launch team was discussing the latest types of solar panels and said he would be happy to let her know more about them after the show!

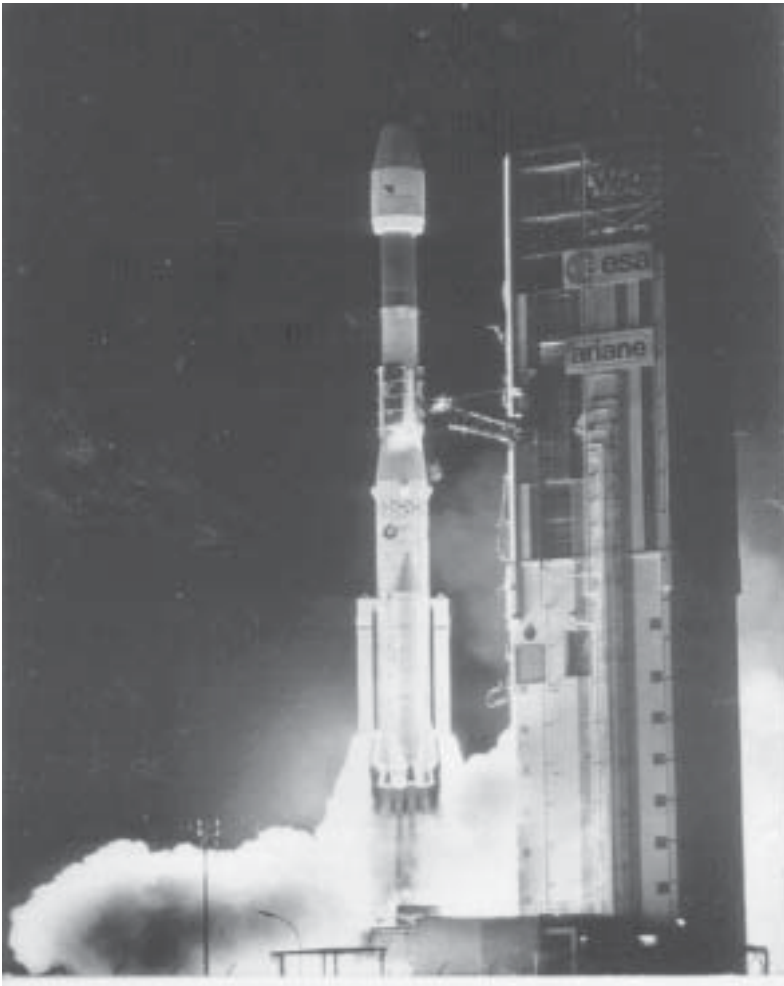
The second film was of very poor quality but showed a group of amateurs activating a remote Scottish island. All the equipment

had to be put in plastic bags to survive the journey. At the jetty they put the gear on a large trawler. From there, we found that the boat they were going to use was on the other side of this boat and was much smaller.

The island had an old railway and fog horn stations run by

compressed air, but long since abandoned. Some of the operators put on an hf station using a home-made vertical and the rest climbed up to the highest point for a spot of vhf operating.

A few hours later they returned safely on the same boat.



Alister's Archives:

Feb 2002

by Alister Watt G3ZBU

Firstly a bit about batteries. There have been some bargains around at Christmas with NiMh AA size rechargeable batteries, and the 'ZBU household have taken advantage of these. A quick web search on how to charge them has proved interesting. Many chargers are advertised and the latest have a switch to select either NiCd or NiMh chemistry.

NiCd have a bad press with regard to the memory effect. This means that batteries will not hold much charge if they are only discharged a small amount and then recharged again. NiMh don't have a memory effect, and can hold a far greater charge. For example NiCd AA cells are often rated at about 700mA/hr whereas NiMh have 160 percent more capacity and 1300mA/hr is common. However NiMh batteries must not be trickle charged.

Once their time is up, the

charger should switch off.

Most rechargeable batteries may be charged at quite high rates safely. The cheap rechargers have a switch to select battery type and as far as I can tell, the switch simply alters the charging time from 4 to 6 hours, and either trickle charges NiCd after that time or switches off completely for NiMh.

Some chargers will discharge the batteries before charging which gives optimum life, but they cost more. When properly used, a NiCd battery can have a greater lifetime than NiMh, but the greater capacity of NiMh is of greater advantage.

Ideally batteries should be discharged regularly. Many of the top secret underground military installations float charge batteries and a recent check on them has shown that the capacity has deteriorated very badly; my advice is to cycle batteries for optimum efficiency.

Finally the first Foundation licence course will be over by the time you read this. HARC has always supported the Novice training scheme and will be running the new course as well. In

a nutshell, the new licence gives a 10 Watt power output on all bands except 10m, takes 10 hours and costs 10 pounds. The next course will start in March and anyone interested in joining will be welcome.

***Feb 2002 Meeting: Sussex Repeater
Update, by Mike G4EFO.***

We had an entertaining evening with not only a talk about how repeaters work but Mike also showed us some magic tricks with bits of rope!

The Amateur 2m repeaters work on a 600kHz spacing. They receive on the lower frequency and transmit on the higher simultaneously. This means that the repeater must be designed to transmit and receive simultaneously, and this is achieved by using cavity filters.

Mike brought along a cavity filter which is a large tube about 3 feet tall and 8 inches in diameter. Inside it has to be silver plated; silver paint and such is not good enough because of the skin effect, where rf only penetrates a

small distance into the material. To get the isolation between transmitter and receiver, at least four cavities are needed. It is vitally important to cut bits of coax cable to exact dimensions to get the performance and also to adjust tuning rods inside each cavity to resonate correctly. It costs over 100 pounds to get a cavity plated!

To reduce interference from other repeaters on the same frequency, the placing of aerials on a mast has to be considered carefully. Mike has put separate aerials for tx and rx at different heights on a mast and by placing them away from the mast can adjust their polar diagrams to obtain best coverage area in an east-west direction.

Another trick is to use low audio sub-carrier tones to access the repeater. However not all transmitters are capable of generating these tones like 83Hz so Mike plans to run two receivers with the most sensitive on listening to CTSS tones, the second for normal 1750Hz access

tones. There was a discussion on how the logic circuits should operate when both receivers pick up a signal.

Mike plans to be operational by August with the new system. No doubt there will be an update on this later on in HARCNEWS.

HARC Classified Ads

For Sale (Silent key)

HF Signal generator CT452A. 10kHz to 72MHz
Valve voltmeter
Advance J2 Audio signal generator
Marconi TF801C VHF signal generator 12MHz to 470MHz
Component bridge
60 foot 3 section mast

Enquiries to G3ZBU

For Sale

Kenwood TS120v HF Transceiver
C/W TL120 100 watt HF linear
and DPC230 Digital External VFO £200.00

TenTec Transvertor 14Mz to 50Mz built
and working worked 1300 miles with 10 watts £80.00
Or near offer

Contact Gavin G7DFV