Better than UR67?

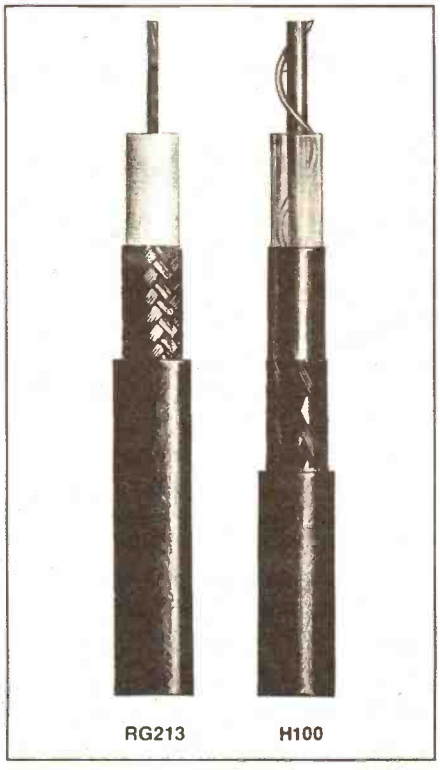
A cable better than UR67 at same price? A special HRT report

Two lengths, each of 25 metres, were acquired for this comparison, and both leads were fitted with N type connectors at either end. Measurements of attenuation were taken from 10MHz up to 1300MHz. The test equipment used included a Marconi *2019* signal generator, a Racal digital RF power meter type *9303*, a Hewlett Packard frequency doubler, various attenuators, and a 1300MHz interdigital filter to clean up the output from the frequency doubler for the 1.3 GHz measurements.

The Racal power meter has an accuracy of around 0.1dB for the applications required for these tests. Extremely accurate 50 ohm loads were used to terminate the Racal measurement heads, measurements being carried out at a level of 1mW up to 1GHz, and approximately 10μW at 1.3GHz. All the attenuation readings include the loss of two N plugs and one N female back to back high quality connector.

You can see from the attenuation figures that not very much is to be gained from a signal attenuation point of view, until you reach a frequency of 145MHz. On 432MHz the difference in attenuation of a 25m run could mean the difference between a contact being just confirmed or lost, but the real gain occurs when *H100* is used on 934MHz, and even more so on 1.3GHz, where a 25m run very nearly multiplies your transmitted power by 2½ times, compared with UR67. Many amateurs cannot justify the expense of the superb cables made by Andrews or Kabelmetal. Such a phenomenal improvement though for long runs on VHF, and even fairly short runs on microwave is very well worth while at the remarkable low price of *H100*, only slightly more expensive, on average, than UR67.

You will notice that the velocity factors of the two cables are rather different, and this may be important to you if you want to make up resonant stubs or matching lines. We also checked what we thought to be a reasonable minimum bending radius. I personally would not recommend *H100* for other than a very large turning loop around a mast, as it is not at all flexible, and you might be better off to consider Andrews *FSJ4* for this, which is also stiff, but perhaps slightly tougher and safer.



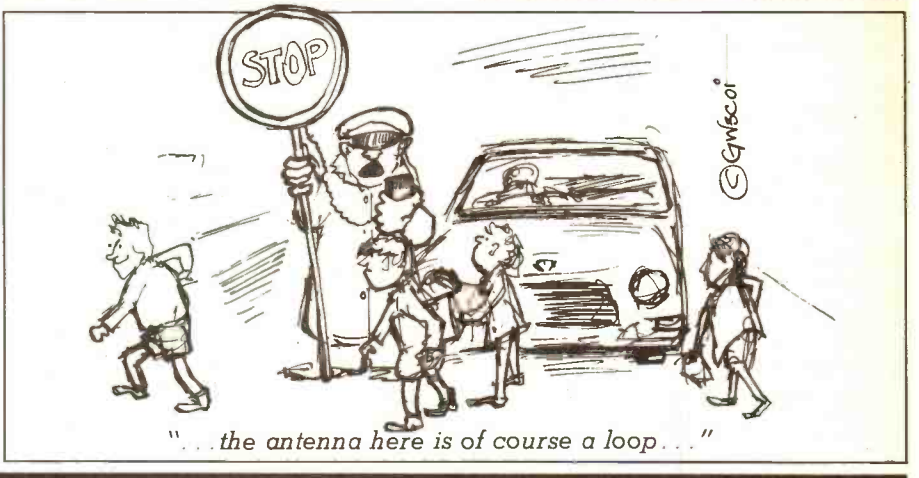
We found the *H100* cable rather more difficult to fix to N plugs than our friendly old UR67, and you may find a heat gun useful for warming up the outer plastic which feels almost slippery to the touch, and yet is very hard, the UR67 plastic being much more supple. I reckon that it will take you about an hour to put two plugs on properly, if you have not previously used *H100*. It is a very robust cable indeed, and is very strongly recommended as being excellent value for money.

Our thanks to W.H. Westlake of Devon, who supplied the cables.

Table 1. Laboratory test results

All tests were made on 25 metre samples of UR67 and *H100*, and the measurements include the effects of the type N connectors.

	UR67	*H100*
Loss at 10MHz (dB)	0.49	0.34
Loss at 30MHz (dB)	0.84	0.54
Loss at 70MHz (dB)	1.37	0.93
Loss at 145MHz (dB)	2.03	1.27
Loss at 432MHz (dB)	3.99	2.36
Loss at 934MHz (dB)	6.40	3.56
Loss at 1300MHz (dB)	8.02	4.22
DC resistance — outer (ohms)	0.08	0.10
DC resistance — inner (ohms)	0.10	0.10
Capacitance (nF)	2.16	2.60
Bending radius (mm)	40	125
Velocity factor	0.67	0.77



"...the antenna here is of course a loop..."