

## INTERNATIONAL ROUTING DESIGNATORS

Lew Jenkins, N6VV  
David B. Toth, M.D., VE3GYQ  
H. N. "Hank" Oredson, WORLI

c/o Dr. D. B. Toth  
499 Bobbybrook Drive  
London, Ontario, Canada  
N5X 1G8

It has become obvious by now that the work-horse of our so-called packet network is the venerable BBS program. In fact, some will argue that it has been too successful. Every time that a band-aid is needed to "fix" the network, it is applied through the various BBS programs. It is probably fair to say that the maintenance of the forwarding tables is a drudgery that most sysops could do without. This point also under-scores a serious problem faced by all networks: ROUTING.

With the introduction of WORLI V7.00 and support for Hierarchical routing designators, we have an opportunity to improve traffic routing particularly for international traffic. Since N6VV is at the present time responsible for traffic to Asia and the Pacific, and occasionally Europe and Africa, he has implemented some Hierarchical routing designators which will assist him in international routing.

Using this structure mail can now be addressed :

JA1ABC @ JA1KSO.JPN.AS  
or  
VK4AHD @ AX4BBS.AUS.AU

Starting today you can begin using Continental and Country designators for international traffic destined for Asia and the Pacific. A forward file may be set up to support the following codes:

### \*\* Continental Designators \*\*

NA - North America  
SA - South America  
EU - Europe  
AS - Asia  
AF - Africa  
AU - Australia

### \*\* Country Designators \*\*

For country codes there is a generally accepted international standard for abbreviations. These are used in international electronic message standards such as ANSI X.12 and EDIFACT. They are published by the International Standards Organization and known formally as ISO 3166-1981(E/F).

Country codes (abbreviated list to show common country codes):

Argentina	ARG	Japan	JPN
Australia	AUS	Korea, North	PRK
Austria	AUT	Korea, South	KOR
Belgium	BEL	Lebanon	LBN
Bermuda	BMU	Liechtenstein	LIE
Bolivia	BOL	Luxembourg	LUX
Brazil	BRA	Malaysia	MYS
Brunei	BRN	Mexico	MEX
Bulgaria	BGR	Monaco	MCO
Canada	CAN	Morocco	MAR
Chile	CHL	Netherlands	NLD
China	CHN	New Zealand	NZL
Colombia	COL	Nicaragua	NIC
Costa Rica	CRI	Norway	NOR
Cuba	CUB	Pakistan	PAK
Denmark	DNK	Panama	PAN
Dominican Republic	DOM	Paraguay	PRY
Ecuador	ECU	Peru	PER
Egypt	EGY	Phillipines	PHL
El Salvador	SLV	Poland	POL
Finland	FIN	Portugal	PRT
France	FRA	Romania	ROM
French Polynesia	PYF	Saudi Arabia	SAU
German Demo. Rep.	DDR	Singapore	SGP
Germany, Federal Rep	DEU	South Africa	ZAF
Greece	GRC	Spain	ESP
Greenland	GRL	Sweden	SWE
Guatemala	GTM	Switzerland	CHE
Haiti	HTI	Syria	SYR
Honduras	HND	Taiwan	TWN
Hong Kong	HKG	Thailand	THA
Hungary	HUN	Turkey	TUR
Iceland	ISL	United Kingdom	GBR
India	IND	United States	USA
Indonesia	IDN	Uruguay	URY
Ireland	IRL	USSR	SUN
Israel	ISR	Venezuela	VEN
Italy	ITA	Yugoslavia	YUG

State and province codes shall be the recognized two-character code established by the American and Canadian Post Offices. These may also be found in the Callbook listings.

It is after we get down to the state/province/county level where the trouble may begin. To understand why, we must examine how the BBS code goes about matching things in the route. The first principle is that it attempts to find a match between the items in its forward file and the left-most item in the address field. As an example, say that we send something to WORLI @ WORLI.CA.USA.NA, and that the only entries

that we have in the forward file are for CA. That match would be sufficient to allow the message to be forwarded. If WORLI were found, that entry would take precedence (because it is more left in the field than CA) and would of course also ensure delivery. The best way to look at it is "WORLI AT WORLI which is in CA which is in USA which is in NA". So far so good.

But the Japanese network wants to use area routing numbers. For example, JA1ABC @ JA1KSO.42.JPN.AS ... and everyone says, "So what, let them!" Of course, that is very mature of all of us, but the trouble is that the 42 in that string may also match wild-card ZIP codes that some folks keep in their forward file, such as 42\*. The solution we propose is to use an agreed upon key character for designators below the state and province level, and we recommend the octothorpe, "#".

So now the above address would be JA1ABC @ JA1KSO.#42.JPN.AS . Other examples could be:

- 1) WORLI @ WORLI.#SFO.#NORCA.CA.U.S.A.NA - WORLI within SFO (San Francisco) within North California, etc.
- 2) VE3BTZ @ VE3GYQ.#LOND.N.#SONT.ON.CAN.NA - VE3BTZ at VE3GYQ in London, in Southern Ontario, in Ontario, etc.

There is another added benefit to this scheme. It involves Gatewaying between the BBS world and other networks, such as TCP/IP via SMTP. Much of the pioneer work in setting up the gatewaying protocols has been done by NN2Z, N3EUA, and PAOGRI, amongst others. The WORLI BBS package allows for the forwarding of mail between the BBS world and the SMTP world. Of note is the fact that the WA7MBL package has allowed such message exporting and importing for some time now. This means that we can take advantage of the the TCP/IP host-names and their domain or hierarchal format for forwarding. Thus it is possible to send mail from the BBS to VE3BTZ as ve3btz@pc.ve3btz.ampr.org or from SMTP to wOrli@wOrli.ca.usa.na and not have any ambiguity.

We expect that WA7MBL will also be implementing hierarchal routing in the near future. This system is still compatable with older style systems, as a system that handles hierarchal forwarding identifies with the H feature letter: [RLI-8.00-CH\$]. If it does not get an appropriate response, it uses the left-most item in the "@ BBS" string as the "@ BBS" for the message.

The authors hope that this paper will serve as a starting place for improved message routing by means of implicit routing. Low-level (VHF) BBSs need only maintain state or province or country codes for distant BBSs, and route such traffic to their nearest HF Gateway. In turn, the HF station routes it to the desired state, where the receiving Gateway station would have a detailed list of the BBSs it serves.

Correspondence may be addressed to the address given at the start of this paper, or to VE3GYQ @ VE3GYQ.ON.CAN.NA or N6VV @ N6VV.CA.U.S.A.NA .