

MDIA5028

7ci fgY'Cj Yfj]Yk

GHJZZ7cbHJWh8YHJ]`g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]hm	@cWUh]cb	D∖cbY
DUi ``F mXYf	d"fmXYf4 i bgk "YXi "Ui	6mY!Uddc]bha Ybh K YXbYgXUm % \$\$!%(\$\$"BchY. Zcf'ch\Yf'hihcf#gž'gYY A ccX`Y		D`YUgY'Ya U]`

GWkcc~7cbhJWh~abZcfa Uh]cb

GWXcc`cZh\Y'5fhg'UbX'AYX]U

Fcca ' %&ž@Yj Y`' žFcVYfhK YVghYf6i]X]b[fl %(Ł

D\cbY. f\$&£'-',) '(,) *

9a U]`. 'gUa 4 i bgk "YXi "Ui

K YVg]hY. k k k "Ufhg"i bgk "YXi "Ui #gUa

7ci fgY 8YW] g

7 fYX]hDc]bhg**

Gi a a UfmcZh\Y'7ci fgY

DgmW.c`c[]gh?ifh@Yk]b`cbW'cd]bYX'h\Uh'h\YfYfg'bch\]b['gc'dfUWf]WU'Ug'[ccX'h\Ycfm'ff'K\Uh'\Y'a YUbh k Ug'h\Uhg]bW'h\Ycfm]g'U'X]gh]`Uhjcb'UbX'a cXY``]b['cZ\i a Ub'YI dYf]YbW'z']ha Um'VY'UXj UbhU[Yci g`m dfc'YWfX'cj Yf'ch\Yfk]gY'i bW'fhU]b'a]']Yi I—\Y'd]b['i g'hc'i bXYfghUbX'h\Y'k Umh\]b[g'UfY'UbX'h\Y'k Umh\]b[g'UfY'UbX'h\Y'k Umh\]b[g'UfY'UbX'h\Y'k Umh\]b[g'UfY'UbX'h\Y'k Umh\]b[g'UhY''om]bhfcXi W]b['mci 'hc'U'fUb[Y'cZWf]hWU''dYfgdYWh] Yg']b'Wa a i b]WUhjcbz'h\]g'Wci fgY'k]'`\Y'd'mci 'hc'fYWc[b]gY'UbX'i bXYfghUbX'h\Y'dck Yf'cZh\Y'W'' hi fU''Zcfa Uhjcbg'VY\]bX'dc`]h]WU''UbX'UXj cWUwh WUa dU]['bg''K]h\ 'fYZYfYbW''hc'Wugyg'UbX'h\Ycf]Yg'fUb[]b['Zfca 'h\Y'WUgg]WU''hc'WcbHa dcfUfmk cf'Xgz'mci k]```YUfb'\ck 'hc']XYbhJzmh\Y'XYYd!gYUhYX'dUhYfbg'Y]h\Yf'WcbgWjci g`mcf'i bWcbgWjci g`myb[U[YX'Vm dc`]h]WU''UWcfg''K]h\'Ub'Ya d\Ug]g'cb'_Ymdc`]h]WU''hYI hgz'h\Y'Wci fgY'Ug_g. K\UhufY'h\Y'W' hi fU''ghfi Whi fU''Yb[]bYg'h\Uhg\Uh'Y'dc`]h]WU''dfcdcg]h]cb3'K\Uhj]bZi YbW'g—cf'Yj Yb'XYhYfa]bYg—ci f'fYWYdhjcb'UbX fYgdcbgY3'Hc'k\]M''XYYd`m'UbW\cfYX'WcbW'dng'Xc'dUffn]W''Uf'dc']h]WU''hYI hg'gdYU_3'H\]g'Wci fgYz'h\Ybz' dfcdcgYg'h\Uhgi W\'hYI hg''DbX'U'''hYI hgz']b'ZUW\—UfY'fcchYX']b'U'' h\Ya 'fUg'ZUf'Ug'k Y'a][\feralleft] z'UbX'h\Uh

5ggYgga Ybh' .; fci d'7 Ua dU][b

8YHJ]`g.

; fci d'7 Ua dU][b

') \$\$!(\$\$\$ k cfXg"

±b fYgdcbgY hc 'U dfYgg]b['gcW]U``]ggi Yž]b 'ga U```[fci dg 'gh XYbhg XYg][b 'U 'dc`]h]WU`!UWhji]gh WUa dU][b

: YYXVUW_'j]U'@A G"

5XX]h]cbU`XYhU]`g.

H\]g`Ugg][ba Ybh]g`gi Va]hhYX`j]U`A ccX`Y`Vm[fci d`WccfX]bUhcfg`cb`m''GYY`Wci fgY`A ccX`Y`g]hY`Zcf`XYhU]`g''`

Hi fb]h]b gYh]b[. H\]g]g bchU Hi fb]h]b Ugg][ba Ybh

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		9UghYf': f]XUmfh\]g'k YY_Ł'XcYg'bch]a dUWnA 8=5) \$&,	
K YY_', .') '5df]`'!'- '5df]`	@YWn fY	Glfi Whi fU']ga '(
		J]gi U`'hYl hg	
		BC'HI HCF-5@	
		DFC>97H'7CBGI@HG'D9F'H-A9H56@9'H<5H K =@@<5J9'699B'89J9@CD98	
		9UghYf'A cbXUmifh\]g'k YY_Ł'XcYg'bchi]a dUWhA 8 =5) \$&,	
K_YY_'''&&'5df]`'!'%* 5df]`	Gh X]c	CB@B9'DFC>97H'K CF?G <cd'f9d@579g @97HIF9</cd'f9d@579g 	
		BC HIHCF -5@ DFC>97H 7CBGI@HG D9F H-A9H56@9 H<5H K - 2000 < 5J9 699B 89J9@CD98	
K_YY_'%\$.'%-'5df]`'!'&' 5df]`	Gh X]c	H\Y``YWnifY`h\]g`kYY_`]g`fYd`UWYX`Vm`gdYW]U``dfcYWn Wcbgi`hg`f]ZfYei]fYXŁ"`	
		BC'HIHCF-5@'9A9F;9B7MDFC>97H 7CBGI@HG'6M5DDC-BHA9BH	

FYgci fWyg

DfYgWf]VYX F Ygci fWYg

< Uk _Ygž'H'f&\$\$' Ł'Glfi WhifU`]ga 'UbX'GYa]cf]Wg'f&bX'YXbŁ'F ci hYX[Y

FYWca a YbXYX FYgci fWYg

7\UbX`Yfž'8"`f&\$%+Ł`GYa]ch]Wg.`H\Y`6Ug]Wg`flfX"`YXb"Ł`Fcih`YX[Y

9U[`Yhcbž'H"'f&\$\$, Ł'@]hYfUfmH\Ycfm'5b'+blfcXi Wf]cb'fl fX"'YXb"Ł'6`UW_k Y``

7ci fgY 9j U`i Uh]cb UbX 8Yj Y`cda Ybh

 $\label{thm:condition} $$HY'\&$\&\$'ZYYXVUW_'Zcf'h,g'WcfY'Wca di `gcfmWci fgY'k Ug'Yl WY``Ybh'k Y```cj Yf') "$$" "$']b'Yj Yfm_Ym $$WhY[cfm''Ghi XYbhg'dUfh]W `Uf'mYb'cmYX'h,Y'a Ybhcf]b[`a cXU`]hmZcf'5ggYgga Ybh' "'H\]g'ZYUhi fY'cZh,Y $$Wci fgY'k]```VY'Z fh\Yf'XYj Y`cdYX']b'&$&%"'$

Gi Va]gg]cb cZ5ggYgga YbhHUg_g Hi fb]h]b Gi Va]gg]cb

⊋mci 'YbWci bhYf'U'dfcV`Ya 'k \Yb'UhhYa dh]b['hc'gi Va]h'mci f'Ugg][ba Ybh'h\fci [\'Hi fb]h]bž'd`YUgY

5 WUXYa]W<cbYghmUbX D`U[]Uf]ga

D`U[]Uf]ga `]g`i g]b['h\Y`k cfXg`cf`]XYUg`cZch\Yfg`UbX`dfYgYbh]b['h\Ya `Ug`mci f`ck b"`±hWJb`hU_Y`a Ubm Zcfa gžZfca `XY`]VYfUhY`W\YUh]b['hc`UWW]XYbhJ``mWcdm]b['Zfca `U`gci fWY`k]h\ci hUW_bck `YX[Ya Ybh'

IBGK [fcidg'd'U[]Uf]ga]bhc'h\Y'Zc``ck]b['WUhY[cf]Yg.

 $7 \text{ cdm}b[...i g]b[...h\Y.gUa Y.cf.j Yfmig]a] \Uf'k cfXg'hc'h\Y.cf][]bU''hYl h'cf']XYU'k]h\ci h'U\V_bck `YX[]b[...h\Y.cf][]bU''hYl h'cf']XYU'k]h'cf']$

- i bXYfgfUbX mci f'f][\hg'UbX'fYgdcbg]V]`]hJYg'Ug'U'gh XYbhUhl BGK
- VY`Uk UfY`cZd`U[]Uf]ga ž`Wcdmf][\hz'l BGK `Gh XYbh7cXY`cZ7cbXi WhUbX`5VWWdhUV`Y`l gY`cZ I BGK `=\forall H`F Ygci f\W\g`Dc`]\m\m
- VY 'Uk UfY 'cZh\Y 'ghUbXUfXg 'cZVY\Uj]ci f'Yl dYWYX 'cZYj YfmcbY ']b 'h\Y 'l BGK 'Wca a i b]hm
- `cWUHY 'gYfj]WYg'UbX ']bZcfa UH]cb'UVci hI BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZh\YgY'UfYUg'k]``VY'ZJa]`]Uf'hc'mci ž'ch\Yfg'k]``VY'bYk"'; U]b]b['U'gc`]X'i bXYfgHJbX]b['cZU``h\YfY`UhYX'UgdYWng'cZ9@+69'k]``\Y`d'mci 'a U_Y'h\Y'a cghicZmci f'ghi X]Yg'UhI BGK "'\\hd.##qi VYWfi |XYg"`]VfUfm'i bqk "YXi "Ui #\`]qY#JVci hY`]qY

5WUXYa]W±bZcfaUhjcb

: cf'YggYbhJU`ghi XYbh]bZcfa UhJcb'fY`UhJb['hc.

• fYei Yghg Zcf Yl hYbg]cb/