



ARTS2095

8][]hU`HYW\bc`c []Yg`UbX`hY`GY`Z

HYfa `Cby`#`&\$%-



7ci fgY`Cj Yfj]Yk

`GHUZZ7cbhUWhi8YHJ`g`

`7cbj Ybcfg`

B Ua Y	9a Uj`	5j U]UV]]m	@cWjhcb	D\cbY

7 ci fgY'8YHJ`g

7 fYX]hDc]bHg`*`

Gi a a UfmicZhY'7 ci fgY

Gi VYWh5fYU.`? W[St 5g`fgdWS` V FWUZ` a`aYk

H\]g`Wci fgY`YI d`cfYg`hY`k Umg`h`UhX][]H`a`YX]U`UbX`hY`Wbc`c[]Yg`g`UdY`ci f`Wc`Y`W]j`Y`UbX`]bX]j`]Xi`U`i`bXYfg]UbX]b[g`cZ`hY`gY`Z`" `hXfUk`g`Vch`h`YcfYh]W]`UbX`dcdi`Uf`UW]ci`bhg`cZ`hY`fY`Uh]cbg\]d`VY`h`YYb`hY`Wbc`c[]Yg`z`]bX]j`]Xi`U`g`UbX`W`h`fYg`Mci`k`j`YI`Ua`]bY`hY`Wc`bh]bi`]hYg`UbX`X]g`Wc`bh]bi`]hYg`VY`h`YYb`c`X`UbX`bYk`"gY`Za`U_]b[`dfUW]W]g`gi`W`Ug`ci`fbU]b[#V`c[[]b[/UbX`gY`Z`dc`f]U]h`fY`#gY`Z]Yg`z`h`c`Wc`bg]XY`f`hY`k`Umg`h`Uha`YX]U`UbX`hY`Wbc`c[mVch`g`UdY`z`UbX`UfY`g`UdYX`Vm]gc`W]c!`W`h`fU`i`bXYfg]UbX]b[g`cZ]XY`b]h]m`Z`fa`Uh]cb`"Mci`k`j`YI`d`cfY`hY`k`Umg`h`Uh]hY`Wbc`c[]Yg`UbX`a`YX]U`d`Uh]Z`fa`g`Wc`bg]f]U]b`gca`Y`gY`j`Yg`UbX`Yb`U`Y`chY`fg`"K`Y`k`j`U`g`c`Wc`bg]XY`f`hY`k`Umg`h`Uh]gY`Za`U_]b[`dfUW]W]g`]b]hY`fgY`W]k`]h`X`U]h]!`[`UhY`f]b[`dfUW]W]g`z`XY`g][b`dfc`W]ggY`g`z`Vi`g]bY`gg`a`cXY`g`z`UbX`di`V`]Wdc`]W]h`Hcd]W]g`]b]W]i`XY`"]Z]!\`UW_]b[`UbX`hY`ei`Ub]h]Z]YX`gY`Za`cj`Ya`Yb]z`a`]W]c`W]Y`V]f]m]UbX`V]f]UbX]b[z`a`YX]U]hYX`]b]h]a`UW]Y`g`]b`X`U]h]b[`UbX`\`cc`_!`i`d`Udd`W`h`fY`g`z`UbX`V]ca`Y]f]W]g`UbX`gi`fj`Y`]`Ub`W`"

7 ci fgY`@YUfb]b[`Ci`hWc`a`Yg

%`9j`U`i`UhY`U`f]Ub[Y`cZ`X][]H`hY`Wbc`c[]Yg`z`]b]W]i`X]b[`gc`W]U`a`YX]U`d`Uh]Z`fa`g`UbX`dfUW]W]g`&`5dd`m]h`YcfYh]W]`Z]Ua`Yk`cf`_g`]b`cf`XY`f`h`c`YI`d`U]b`hY`]a`dUW]ic`Za`YX]U`UbX`hY`Wbc`c[mcb`]bX]j`]Xi`U`UbX`Wc`Y`W]j`Y`YI`dfY`gg]cbg`cZ]XY`b]h]m`" `7`ca`a`i`b]W]U]h`W]Y`U`f]m]UbX`dY`fgi`Ug]j`Y`m]b`Vch`j`Y`fV`U`UbX`k`f]hY`b`Wc`b]hY`h]g`" (`8`Yg][b`UbX`Wc`bXi`W]h`V`U]g]W]fY`gY`U`f]W]z`Vch`]b]XY`dY`b]XY`b]h]m]UbX`]b`hY`Ua`g`z`X`f]Uk`]b[`cb`U`W]U]XYa`]W]UbX`bcb!`U`W]U]XYa`]W]fY`gci`f`W]g`"

HYUW]]b[`G]h`f]U]hY`[]Yg`

H\]g`Wci fgY`dfcj`]XY`g`gh`XY`b]h]k`]h`hY`c`ddc`f]h`b]m]h`c`XY`j`Y`cd`W]h]W]U`UbX`Wc`b]W]d]h`U`Z]Ua`Yk`cf`_g`Z`cf`i`bXYfg]UbX]b[`X][]H`hY`Wbc`c[m]UbX`]h]g`fY`Uh]cbg\]d`h`hY`gY`Z`":`UW]!`h`!`Z]UW`Y`W]h`fY`g`Uh`hY`g]h]U`f]h`cZ`hY`Wci`fgY`YI`hY`bX`hY`gY`h]fY`UX]b[g`h`c`]b]h]c`Xi`W`_`Y`m]h`YcfYh]W]`Wc`b]W]d]h]Z`ca`hY`fY`UX]b[g`z`W]U]gY`gh`X]Yg`z`UbX`fY`gY`U`f]W]a`Y`h`c`X`g`UbX`a`Y`h`c`X`c`c[]Yg`X`f]Uk`b`Z`ca`hY`Z]Y`X`g`cZ`g]W]Y`b]W]`UbX`hY`Wbc`c[m]gh`X]Yg`z`a`YX]U`gh`X]Yg`UbX`W`h`fU`gh`X]Yg`"5`Z]Y`f`hY`]b]h]U`Y`W]h`fY`g`z`gh`XY`b]h]g`dfY`d`U`fY`Z`cf`h`h`c]f]U`g`h`f]ci`[\`Z]YI`]V`Y`cb`]bY`U`W]j`]h]Yg`z`g`c`f]h]X][]H`Y`W]h`fY`g`UbX`gY`h]fY`UX]b[g`"Hi`h`c]f]U`g`Y`b]Wc`i`fU[Y`W]h]W]h`fY`Z]Y`W]h]cb`cb`_`Y`m`fY`UX]b[g`UbX`W]U]gY`gh`X]Yg`z`Vi`]X]b[`cb`gh`XY`b]h]g`ck`b`c`V`gY`f]U`h]cbg`cZ`f]j`Y`f]m]X`U`f]Y`b[U[Ya`Y`b]h]k`]h`X][]H`hY`Wbc`c[]Yg`"Hi`h`c]f]U`g`U`g`c`dfcj`]XY`gi`ddc`f]h]UbX`Z`ca`Uh]Y`Z]Y`X`V`U`W`_`cb`U`ggY`gga`Y`b]h]g`"G]h`XY`b]h]g`U`fY`Y`b]Wc`i`fU[YX`h`c`dfc`Xi`W`a`i`h]a`c`X`U`UbX`]b]hY`f]U`W]j`Y`k`cf`_`Z`cf`U`ggY`gga`Y`b]h]U`cb[g]X]Y`k`f]hY`b`gi`Va`]gg]cbg`"

5ggYgga Ybh

H\]g'7ci fgY'Cj Yfj]Yk 'dfcj]XYg'mci 'k]h'h\Y'VUg]W]bZcfa U]cb'UVci h'h\Y'Wci fgY'UbX'YI d'U]bg'ja dcfUbh I B GK 'dc'j]Wm'8YHU]g'Zcf'YUWX'UggYgga YbhUFY'Uj U]UV'Y'cb'A ccX'Y"

Hc'dUgg'h\]g'Wci fgY'Zmci 'a i gha U_Y'U'gYf]ci g'UhhYa dhUh5ggYgga Ybhg'%UbX'' "

H\Y'dfYZffYX'fYZfYbW]b['gmghYa 'Zcf'h\]g'Wci fgY'jg'<Ufj UfX'z'k \]W\ 'jg'Ub'j]b!hI hfYZfYbW]b['gmghYa " H\YfY'UFY''b_g]b'h\Y''<Y'dZ 'F Ygci fW'g''cb'A ccX'Y'UVci h\ck 'hc'i gY'<Ufj UfX''Mci 'a Umi gY'Ubch\Yf gmghYa 'Zcf'Ub'UggYgga Ybh]Zmci 'k]g\z'Vi hirci 'a i ghUdd'm]hWcbg]ghY'bhmiUbX'UWW'fUH'Y'm"

5ggYgga YbhHUg_g'

5ggYgga YbhHUg_	K Y][\h	8i Y'8UH'	Gh XYbh@YUfb]b[Ci hWca Yg'5ggYggYX
K f]h]b['HUg_	(\$i	#\$#\$' #&\$%- '%%) - 'DA	%z&z
hX]j]Xi U'F YgYUfW\ 'Dfc YW\ 8Yj Y'cda Ybh) i	Bch5dd']WUV'Y	%z&z(
hX]j]Xi U'F YgYUfW\ 'Dfc YW\	() i	%& #\$(#&\$%- '\$, .\$('DA	%z&z z(

5ggYgga Ybh8YHU]`g

5ggYgga Ybh% 'K f]h]b['HUg_

GhUfhXUH'. 'Bch5dd']WUV'Y

@Yb[h. '&z\$\$\$'k cfXg

8YHU]g. '&z\$\$\$!k cfX'k f]h]b'Ugg][ba Ybh'zZYXVUW_'dfcj]XYX'j]U'Hi fb]h]b"

Hi fb]h]b'gYh]b[. H\]g'Ugg][ba Ybh]g'gi Va]h'X'h'fci [\ 'Hi fb]h]b'UbX'gh XYbhg'W]b'gYY'Hi fb]h]b'g]a]'Uf]m fYdcffg"

5ggYgga Ybh' . 'bX]j]Xi U`F YgYUfW`Dfc YW`h

GhUfhXU`hY . 'Bch5dd`]WUV`Y

@Yb[h . '&ž) \$\$!k cfXgžcf`Yei]j U`Ybh

8YhU]`g . '&ž) \$\$!k cfX`cf`Yei]j U`YbhfYgYUfW`d`fc`YW`žZYXVUW`_`d`fcj]XYX`j]U`Hi fb]h`b"

Gi Va]gg]cb`bchYg.5b`UXX]h]cbU`ž`bcb!Hi fb]h`b`"]b`_`k]`VY`d`fcj]XYX`ž`f`h`Y`gi Va]gg]cb`cZUbmibcb!hYI h U`Y`Ya Yb`h`g"

Hi fb]h`b`gYh`h`b[. 'H\]g`Ugg][ba Ybh]g`gi Va]h`YX`h`fci [\ `Hi fb]h`b`UbX`gh XYbhg`WU`b`gYY`Hi fb]h`b`g)a]Uf]h`m`fYd`c`f`g"

5 hYbXUbW F Yei]fYa Ybhg

5 hYbXUbW 'cZ@YWi fYg'UbX'Hi hcf]U'g'jg'a UbXUhcfm]b'h]g'Wci fgY"i bYI W gYX'UVgYbW' Fca 'a cfY'hUb &\$i 'k]'fYgi 'h]b'h'Y'Uk UfX'cZU'ZU]'[fUXY"

h'hi hcf]U'g'mci 'k]'UWj] Y'mYb[U[Y'k]h'WcfY'Wci fgY'WcbhYbhihUhk]'YbUV'Y'mci 'h'XYa cbghfUfY UfU]ba YbhicZfcf'Y'd'mci 'h'UfU]bE'7 ci fgY '@YUfb]b['Ci hWca Yg'%'&'&' 'UbX'(' "

h'YWi fYg'mci 'k]'UWj] Y'mYb[U[Y'k]h'WcfY'Wci fgY'WcbhYbhihUhk]'YbUV'Y'mci 'h'XYa cbghfUfY UfU]ba YbhicZfcf'Y'd'mci 'h'UfU]bE'h'Y'UV]'mhc'Yj U'i UfY'U'fUb[Y'cZX][]hU'h'WXbc'c[]YgZ]bWi X]b['gcWU' a YX]U'd'UhZ'fa g'UbX'dfUW]Wg'f7 ci fgY '@YUfb]b['Ci hWca Y'%'&'UbX'Udd'mh'YcfYh'W' ZUa Yk cf_g]'b'cfXYf h'YI d'U]b'h'Y'ja dUW'icZa YX]U'UbX'h'WXbc'c[mcb''bXj]Xi U'UbX'Wc''YWi] Y'YI dfYgg]cbg'cZ]XYbh]m f7 ci fgY '@YUfb]b['Ci hWca Y'&'&"

7 ci fgY'GWXYXi `Y

J]Yk 'WUgg'hja YfUVY

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

D`YUgY`gYY`A ccX`Y`Zcf`U`fYei]fYX`fYUX]b[g`UbX`fYgci fWg"

F YWca a YbXYX`F Ygci fWg

D`YUgY`gYY`A ccX`Y`Zcf`U`fYei]fYX`fYUX]b[g`UbX`fYgci fWg"

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

Gh XYbhZYXVUW`_]gj U`i YX`]b`h`]g`Wci fgY`UbX`Y`dg`i`g`]a`dfcj`Y`mci`f`YUfb]b[`YI`dYf]YbVW`" `b`h`Y`dUghz`
UbUmg]g`cZA`m9I`dYf]YbW`gi`fj`YmfYgi`hgZ`Ug`k`Y`Ug`X]fYVhZYXVUW`_Zfca`gh`XYbhgZ`Ug`YX`hc`fYXi`WX`
bi`a`VYfg`cZfYUX]b[`gZ`bYk`Wci`fgY`hcd]Wg`UbX`h`Y`fYZ]bYa`YbhczUggYgga`Ybh]bglfi`W]cbg":`cf`YI`Ua`d`Yz`
h`Y`YI`dYVW]h]cbg`Zcf`5ggYgga`Ybh`" `bX]j`]Xi`U`F`YgYUfW`Dfc`YVh`Uj`Y`VYYb`a`cf`WYUfmgYhici`hZ`ck`]b[`
gh`XYbhZYXVUW`_"

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

Gi Va]gg]cb`cZ5ggYgga YbhHUg_g

Hi fb]hb`Gi Va]gg]cb

Ʒmci`YbWci`bhYf`U`dfcV`Ya`k`Yb`U`H`Ya`dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybh`h`fci`[`\`Hi`fb]hb`z`d`YUgY`
H`Y`d`l`cb`Y`9I`H`fb`U`Gi`ddcfh`cb`-`,`)`'`'`'`%`cf`Ya`U]`h`Ya`cb`YI`H`fb`U`H`h`gi`ddcfh`4`i`bgk`"YXi`"Ui`"Gi`ddcfh`
`l`ci`fg`UfY`,`.\$\$Ua`-`-%\$.\$\$da`cb`k`YY`XUmg`UbX`-`.\$\$Ua`-`).\$\$da`cb`k`YY`YbXg`f`l`*)`XUmg`U`m`Y`Uf`l`"Ʒmci`
UfY`i`bUV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybh`Xi`Y`hc`U`Z`U`h`k`]h`Hi`fb]hb`mci`a`Um`Udd`m`Z`f`Ub`YI`H`bg]cb`z`Vi`hmc`i`
a`i`gh`f`Y`h]b`mci`f`h]W`Y`h`bi`a`VY`f`Z`ca`9I`H`fb`U`Gi`ddcfh`f`U`cb[`k`]h`Ub`m`c`h`Y`f`f`Y`j`Ub`h`X`c`W`a`Y`b`h`g`l`hc`
]b`Wi`X`Y`U`g`Y`j`]X`Y`b`W`hc`gi`ddcfh`mci`f`YI`H`bg]cb`Udd`]W`h]cb"Ʒmci`Ya`U]`9I`H`fb`U`Gi`ddcfh`mci`k`]`
Ui`h`ca`U`h]W`m`f`Y`W`]j`Y`U`h]W`Y`h`bi`a`VY`f`z`Vi`h]Z`mci`H`Y`d`l`cb`Y`mci`k`]`b`Y`Y`X`hc`gd`Y`W`]W`m`U`g`_`Z`f`cb`Y`
Hi`fb]hb`U`gc`d`fc`j`]X`Y`g`i`d`X`U`H`g`i`cb`h`Y`j`f`g`m`g`h`Ya`g`h`U`h`g`i`cb`H`k`]h`Y`f`"

;`Yb`Y`f`U`m`z`Ugg`Y`gga`Y`bh`h`U`g`_`g`a`i`gh`V`Y`gi`Va`]h`Y`X`Y`Y`W`f`cb]W`m`j`]U`Y`]h`Y`f`Hi`fb]hb`cf`U`A`cc`X`Y`
Ugg][`ba`Y`bh`h`b`]b`g`h`U`b`W`g`k`Y`f`Y`h`l`g`]g`b`c`h`i`d`c`g`g]V`Y`z`]h`k`]`V`Y`g`h`U`H`X`i`cb`mci`f`W`ci`fg`Y`g`A`cc`X`Y`g`]h`k`]h`
U`h`f`b`U`h]j`Y`gi`Va`]gg]cb`X`Y`h]g`"

:`cf`]b`Z`c`fa`U`h]cb`cb`l`ck`hc`gi`Va`]h`Ugg][`ba`Y`bh`g`i`cb`]b`Y`j`]U`A`cc`X`Y`.\`h`td`g`#`g`h`X`Y`b`h`i`bgk`"YXi`"Ui`#`ack`!
gi`Va`]h`Ugg][`ba`Y`bh`a`cc`X`Y`"

5 WUXYa]W<c bYghmUbX`D`U[]Uf]ga

D`U[]Uf]ga `]g`i g]b[`hY`k cfXg`cf]XYUg`cZchYfg`UbX`dfYgYbh]b[`hYa `Ug`mci f`ck b" `hWUb`hU`Y`a Ubm
Zcfa gž`Zca `XY`]VYfUHY`WXYU]b[`hc`UWV]XYbhU`mW`dm]b[`Zca `U`gci fW`k]h`ci hUW_bck`YX[Ya Ybh`

I BGK `[fci dg`d`U[]Uf]ga `]bhc`hY`Zc`ck]b[`WUHY`[cf]Yg.

7 cdm]b[.`i g]b[`hY`gUa Y`cf`j Yfmg]a]Uf`k cfXg`hc`hY`cf][]bU`hYI hcf]XYU`k]h`ci hUW_bck`YX[]b[`hY`
gci fW`cf`i g]b[`ei chU]cb`a Uf_g" `H\]g`U`gc`Udd`]Yg`hc`]a U[Ygž`UfhUbX`XYg][b`dfc`YWgž`Ug`k Y`U`g
dfYgYbhU]cbg`k \YfY`gca YcbY`dfYgYbh]g`UbchYf`g`]XYUg`cf`k cfXg`k]h`ci hW`YX]h`

hUddfcdf]UHY`dUfUd`fUg]b[.`7`U`b[]b[`U`ZYk`k cfXg`UbX`d`fUgYg`k`Y`a cghmifYU]b]b[`hY`cf][]bU`
ghfi W`i fY`UbX`#`f`dfc[fYgg]cb`cZ]XYUg`cZ`hY`cf][]bU`ž`UbX`]bZcfa U]cb`k]h`ci hUW_bck`YX[Ya Ybh`H\]g`U`gc
Udd`]Yg`]b`dfYgYbhU]cbg`k \YfY`gca YcbY`dUfUd`fUgYg`UbchYf`g`]XYUg`cf`k cfXg`k]h`ci hW`YX]h`UbX`hc
d]YW]b[`hc[YhYf`ei chYg`UbX`dUfUd`fUgYg`]bhc`U`bYk`k \c`Yž`k]h`ci hUddfcdf]UHY`fYZYfYbW]b["

7 c`i g]cb.`k cf_]b[`k]h`chYfg`Vi hdUgg]b[`cZ`hY`k cf_]Ug`U`dYfgcb`g`]bX]j]Xi U`k cf_]7 c`i g]cb`U`gc
]bWi XYg`dfcj]X]b[`mci f`k cf_]hc`UbchYf`gh`XYbhVYZc`fY`hY`Xi Y`XUHYž`cf`Zc`f`hY`di fdcgY`cZ`hY`a

- i bXYfghUbx'mci f'f][\hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[]Uf]ga ž'Wcdmf][\hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5Ww'dhUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wm
- VY'Uk UfY'cZh'Y'ghUbxUfXg'cZVY\Uj]ci f'YI dYW'X'cZYj Yfmcby`]b'h'Y'I BGK 'Wca a i b]m
- `cWJh'gYfj]Wg'UbX']bZcfa Uhcb'UVci hl 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 bXYfghUbx]b['cZU`h'Y fY'UH'X'UgdYW'g'cZ9@-G9'k]`Y'd'mci 'a U_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\hhd.##ji V'YW'i \]XYg" \]VfUfm'i bgk "YXi "Ui #' \]gY#JVci h' \]gY](#)

5 WUXYa]WbZcfa Uh]cb`

: cfYggYbh]U`ghi XYbh]bZcfa Uh]cb`fY`Uh]b[`rc.

• fYei Ygh]ZcfYI hYbg]cb/