



## ARTS3759

DfYdUf]b[ 'Zcf'UbX'F YZYW]b[ 'cb' ðhYfbUh]cbU` ðhYfbg\]dg

HYfa `Cby`#`&\$&\$

7 ci fgY`Cj Yfj ]Yk

`GHJZ`7 cbhJW`i8YHJ`g`

`7cbj Ybcfg`

B Ua Y	9a Uj`	5j Uj`UVj`]m	@cWjhcb	D\cbY
Gi gUbbY`GWa YjX`	g"gwAa YjX`4 i bgk "YXi "Ui	VmUddc]bha Ybh	%, `A cfj Yb 6fck b`6i ]X]b[	f\$&E`- ' , ) &( \$)

GWcc``7cbhJW`i`bZcfa Uh]cb

GWcc``cZGcWjU`GWYbWg

Fcca`%) -

A cfj Yb`6fck b`7 &\$

Ya Uj`.gcgg4 i bgk "YXi "Ui

d\cbY. \$&`- ' , )`% \$+

7 ci fgY'8YHJ]`g

7 fYX]hDc]bHg`\*`

Gi a a UfmicZ`hY'7 ci fgY

Gi V`YWh5fYU. 6WhWab\_ W f E fgV[Wé

H\]g`Wéi fgY`dfYdUFYg`mci `Zcf`hY`]bHfBg] Y`XYa UbXg`cZUb`]bHfUhfcbU`k cf\_!`]bHf[ fUHfX`YUfb]b[ YI dYf]YbW`" `h`hY`Zci f`XUmg`cZ]bHfBg] Y`k cf\_g`cd`UWf] ]hYgžmci `k ]`X]gW gg`hY`]a dcfUfbW`cZ Wé`bHf] h U]g]b[ `mci f`YI dYf]YbW`ž`UbX`XYj Y`cd`fYZYWf] Y`g\_]`g`bYW`ggUfmitc`a Ul ]a ]gY`mci f`YUfb]b[ `cb d`UW`a YbH`5`][ bYX`k ]h`l` BGK `g`Ya d`Ug]g`cb`k cf\_!`]bHf[ fUHfX`YUfb]b[ ž`h`]g`Wéi fgY`]g`XYg][ bYX`hc Ybgi fY`h`Uhmci `[ Yh`h`Y`a`cghci hcZ`mci f`]bHf`fbg`d`cf`d`UW`a`Ybhcj YfgYUgž`UbX`h`Uhmci `WU`b`V`ch` Wé`b`Hf]Vi h`Y`hc`ž`UbX`VYbY`Z]h`Z`ca` `mci f`dYf]c`X`k`]h`ž`mci f`c`ghc`f[ Ub]gUhfcb`]b`Ub`Y`h`]WU`ž`fYgdYW`ž` ž`UbX a i h U`mdfcXi Wf] Y`k`Um`

7 ci fgY`@YUfb]b[ `Ci hWé`a Yg

%` 5fh]W`UHf`Ub`i bXYfghUfbX]b[ `cZ`ck`h`Y`cf]Yg`g`UdY`dfUWf]W`" &` 9l` \]V]h`Wf]h]WU`Uk`UfY`bY`gg`UbX`Wé`b`Hf] h`g`Y`bg]h] Y`Udd`fY`W]Uhfcb`cZ`XYj Y`cda`YbH`ž`i`a`Ub]`fUf]`Ubž` UbX`#`f`Wé`a`a`i`b]`mdfUWf]W`" ` " 9j`U`i`UHf`h`Y`Y`h`]WU`X]a`Ybg]cbg`cZ`XYj Y`cda`YbH`ž`i`a`Ub]`fUf]`Ubž`UbX`#`f`Wé`a`a`i`b]`mdfUWf]W`ž` ]bW`X]b[ `Vi`h`b`ch`]a`]h`X`hc`i`a`Ub`f][`h`g`UbX`gc`W]U`↑`gh]W`df]b`W]d`Yg`" (" F`YZY`W`icb`UbX`Yj`U`i`UHf`k`cf`d`UW`dfUWf]W`ž`dfc`Z`gg]cbU`XYj Y`cda`YbH`ž`UbX`YUfb]b[ "

HYUW\]b[ `GhfUHf[ ]Yg`

H\]g`Wéi fgY`i`gYg`DfcV`Ya`!6UgYX`@YUfb]b[ `fD6`@`k` \]W`di`hg`h`Y`gh`XYbh`Uh`h`Y`W`b`f`Y`c`Z`h`Y`YUfb]b[ `ci`fYmž`f`Yei`f]b[ `h`Y`a`hc`d`Um`Ub`UWf] Y`fc`Y`]b`h`Y`YUfb]b[ `dfc`W`gg`"Gh`XYb`hg`UfY`Yb[ U[ YX`k`]h` Wé`b`Hf]Vi`h]b[ `hc`fYU`!`]Z`d`fcV`Ya`g`"H\]g`a`YUbg`h`U`h`gh`XYb`hg`UfY`UV`Y`hc`Udd`m`k` \`Uh`h`Y`m`YUfbYX`ž`UWéi`]fY` bYk`g\_]`g`f]Y`X`\_bck`YX[ Y`ž`h`Ua`k`cf`ž`cf[ Ub]gUhfcbU`\_bck`YX[ Y`E`h`U`hk`]`VYbY`Z]h`h`Y]f`ž`h`fY` WUfYfYg`H\YfY`UfY`gYj`YfU`fYUgcbg`Zcf`i`g]b[ `D6`@]b`h`]g`Wéi`fgY.`

h`fYj`c`j`Yg`Ufci`bX`h`Y`gh`XYbh`h`U`D6`@`Ybj`]fcb`a`Yb`h`gh`XYb`hg`UfY`dYf`g`cbU`m`fY`g`d`c`bg]V`Y`Zcf`k` \`Uh` h`Y`m`YUfb`"H\Y`m`h`U`\_Y`d`Uf]b`X]gW`gg]cbgž`g`UfY`\_bck`YX[ Y`UbX`ž`hc[ Y`h`Y`f`k`]h`h`Y]f`c`ghc`f[ Ub]nUhfcb` Z`fa`i`UHf`mci`f`ck`b`YUfb]b[ `cV`Y`Wf] Yg`"

@YUfb]b[ `Xmb`Ua`]WU`m`6m`Uddfc`UW\]b[ `XYj`Y`cda`Yb`hei`Y`gh]cbg`]b`dfUWf]gY`ž`gh`XYb`hg`WU`b`Udd`m` h`Y`cf`Y`h]WU`YUfb]b[ `UbX`fYZY`W`icb`h`Y`YUfbYX`k` \]Y`[ U]b]b[ `bYk`g\_]`g`"H\Y`m`WU`b`U`gc`]X`Y`b`h]Zm[ `Udg`]b` h`Y]f`\_bck`YX[ Y`h`U`h`h`Y`m`WU`b`Z`i`dcb`fY`h`fb]b[ "H\Y`c`d`d`c`f`h`b]`m`itc`fYZY`W`icb`h`Y`Z]Y`X`YI`dYf]YbW` Yb`Ub`W`g`"gh`XYb`hg`UV`]m`itc`VY`Wé`a`Y`Ub`c`V`g`Y`f]`Ub`h`W`Ub[ YI`dfUWf]h]cbYf`"

5Wéi`f]b[ `g\_]`g`Zcf`Z]Y. 5b`]bHfBg] Y`k`cf`\_!`YI`dYf]YbW`WU`b`dfcj`]X`Y`gh`XYb`hg`k`]h`h`Y`Z]f`gh`U`gh`Y`c`Z`k` \`Uh`]h` a`YUbg`hc`VY`U`XYj`Y`cda`Yb`hd`fc`Z`gg]cbU`UbX`[ U]b]g\_]`g`h`Y`m`UfY`i`b`\_Y`m`itc`UWéi`]fY`]b`U`WU`gg!`fcca` gY`h]b[ "5`Z]Y`X`]bHf`fbg`d`]b`U`W`h`fU`m`X]j`YfgY`Ybj`]fcb`a`Yb`h`a`U\_]b[ `h`Y`X]gW`gg]cbg`YgdYW]U`m`]j`Y`m`UbX` VY]b[ `dUf`hc`ZU`h`Ua`]b`U`Wé`a`a`i`b]`m`ic`f[ Ub]nUhfcb`dfYgYb`hg`gh`XYb`h`k`]h`h`Y`c`d`d`c`f`h`b]`m`itc`k`cf`\_k`]h` dYcd`Y`Z`ca` \][ \`m`X]j`Yf[ Y`b`h`X]gW]d`]b`Uf`m`VUW`[ fci`bXg`"Gh`XYb`hg`YUfb`YggY`b`h]U`g\_]`g`ž`gi`W`Ug`"ghY]b[ `hc`ch`Y`fgž`dfYgY`b`h]b[ `h`Y]f]j`]Yk`dc]b`h`ž`XYV`U`h]b[ `ž`k`f]h]b[ `fY`d`c`f`hg`UbX`k`cf\_]b[ `Wé`U`V`c`f`U`h]j`Y`m`

## 5ggYgga Ybh

- 5ggYgga Ybhg\ci`X`VY`fYZfYbW`X`j`b`UWw`fXUbW`k`j`h`h`Y`GW`cc`cZGcWU`GWYbW`g`F`YZfYbW`b`[`i`j`X`Y`Z`U`j`U`U`V`Y`U`h`  
`h`d`g`#`g`c`W`U`g`W`Y`b`W`g`"U`f`g`"i`b`g`k`"Y`X`i`"U`i`#`a`Y`X`j`U`#`G`C`G`G`:`j`Y`#`G`c`G`G`S`F`Y`Z`f`Y`b`W`b`[`S`:`i`j`X`Y`S`&`\$`%`-`"d`X`Z`


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

D`YUgY`Wcbgi`hA ccX`Y`Zcf`Z fh`Yf`]bZcfa Uh]cb

Gi Va ]gg]cb`bchYg.C b`]bY`gi Va ]gg]cb

Hi fb]h]b`gYH]b[ .`H\]g`Ugg][ ba Ybh]g`gi Va ]hYX`h`fci [ \`Hi fb]h]b`UbX`ghi XYbHg`WJb`gYY`Hi fb]h]b`g]a ]`Uf]m  
fYdcfHg"

5ggYgga Ybh&. DfY!8YdUfhi fY`DcfhZc`]c

GHUfhXUHY. `Bch5dd`]WV`Y

@Yb[ h. `%z) \$\$

8YHJ]`g. `Gh XYbHg`gi Va ]hU`h`fYY!dUfhdcfhZc`]c`f%z) \$\$`k`cfXgE`k` \]W`Wcbg]ghg`cZg`cfhV`c[ `g`ci`h]b]b[  
h`Y]fU`Dcg]h]cbU`]mV`E`#hYfbg\]d`9! dYWU]h]cbgUbX`W`F ]g\_`UggYgga Ybh#a ]b]a ]gU]cb`ghfUHY [ m`Gh XYbHg`k` ]`  
VY`UggYggYX`VUgYX`cb`U`fi Vf]Wa UXY`Uj U]UV`Y`h`h`Ya` `Uh`h`Y`ghUfhcZ`h`Y`W`i fgY`gc`h`YmWJb`k`cf\_

5 H\]g'Wci fgY' ]g'cZYfYX' ]b' V'YbXYX'a cXi g'"Ghi XYbHg'UfY'fYei ]fYX'hc' UH\]bX'HK C' ZJW!hc!ZJW'gYgg]cbg

gWXYXi `YX'UhH`Y`VY[ ]bb]b[ `cZ`h`Y`Wci fgY'"`H\Y`cb`]bY`7 ci fgY`A cXi `Yg`UfY`XYg][ bYX`Zc`f`gh`XYbHg`hc`  
 a`cj`Y`h`fci`[`\`h`Ya`fci`[`\`m`%`&`a`cXi`Yg`dYf`XUm'"`H\]g`k`]"`Ybgi`fY`U`VU`UbW`X`dYdUfU]cb`Zc`f`h`Y`";`c`VU`  
 7`\\Ub[`Y`h`f`f`b`g`\\d`"B`c`W`a`d`Y`h`b[`c`b`]bY`a`cXi`Yg`]b`U`h`a`Y`m`ZJg]cb`WJb`Y`c`d`U`f`X]gY`Wci fgY`dfc[ fYgg]cb`  
 UbX`c`j`YfgYUg`dYdUfYbYgg"

7 ci fgY`GWXYXi `Y`

[J`Yk`WUgg`h`a`Y`h`U`V`Y`](#)

H]a`Y`h`U`V`Y`

8 UH\	HmdY	7 cbhYbh
K YY_`%`%+`:`YVfi Ufm!`&% : YVfi Ufm	6`Y`b`X`Y`X	H\]g'Wci gfY' ]g'cZYfYX' ]b' ]bH\bg] Y'a cXi g'cj Yf'k c k YY_g'"`8 i f]b[ `h`g`Z]fghk YY_`h`Y`fY` ]g`c`b`Y`ZJW!hc! ZJW'gYgg]cb`cb`A`cbXUnž`%+`:`YVfi Ufm!&\$&\$ f!`!*`da`E'"`C`h`Y`fk` ]gY`gh`XYbHg`g\ci`X`k`cf_`h`fci`[`\` h`Y`a`cXi`Yg`]b`h`Y`f`c`k`b`h`a`Y`ž`fci`[`\`m`%`&`a`cXi`Yg` dYf`XUm'"`h`i]g`ja`d`c`f`U`b`h`h`U`h`h`Y`g`h`XYbHg`dUW`h`Y`f` W`a`d`Y`h`c`b`g`c`h`Y`m`W`b`U`g_g`ei`Y`gh`c`b`g`Zc`f`h`Y` gYW`c`b`X`ZJW`hc`ZJW`gYgg]cb`\\Y`X`]b`K`YY_`&"
K YY_`&`&(`:`YVfi Ufm!`&` : YVfi Ufm	6`Y`b`X`Y`X	H\]g'Wci gfY' ]g'cZYfYX' ]b' ]bH\bg] Y'a cXi g'cj Yf'k c k YY_g'"`8 i f]b[ `h`g`gYW`c`b`X`k`YY_`h`Y`fY` ]g`c`b`Y`ZJW! hc!ZJW'gYgg]cb`cb`A`cbXUnž`&(`:`YVfi Ufm!&\$&\$ f!`!*`da`E'"`C`h`Y`fk` ]gY`gh`XYbHg`g\ci`X`W`c`b`h`bi`Y`hc` k`cf_`h`fci`[`\`h`Y`a`cXi`Yg`]b`h`Y`f`c`k`b`h`a`Y`ž`fci`[`\`m` %`&`a`cXi`Yg`dYf`XUm'"`M`ci`b`Y`Y`X`hc`\\U`j`Y`W`a`d`Y`h`Y`X` U`"a`cXi`Yg`V`Y`Z`c`f`Y`Y`U`j`]b[ `Zc`f`m`ci`f`c`j`YfgYUg` k`cf_d`UW`a`Y`h`Y`I`d`Y`f`Y`b`W`"  H\Y`:`B`5`@`:`UW`hc`:`UW`G`Y`gg]cb`k`]"`c`W`W`f`U`Z`Y`f` m`ci`f`Y`h`f`b`Z`c`a`c`j`YfgYUg`UbX`k`]"`V`Y`\\Y`X`c`b`(`A`Um` &\$&\$`f`U`Z`Y`f`b`c`c`b`E`"

F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

D`YUgY`Wcbgi`hA ccX`YzU``fYgci fWg`UfY`dfcj ]XYX`cb`]bY``

F YWca a YbXYX`F Ygci fWg

D`YUgY`Wcbgi`hA ccX`YzU``fYgci fWg`UfY`dfcj ]XYX`cb`]bY``

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

Gh XYbhYj U`i Uh] Y`ZYXVUW`]g [ UhYfYX`hfcj [ \ `I` BGK` f]A` m9I` dYf]YbW``Gh XYbhg`Uj Y`U`gc`hY`  
cddcfh`b]hmc`dfcj ]XY`ZYXVUW`Zc`f`YUW`cb`]bY`Wci`fgY`a`cXi`Y`UbX`Xi`f]b[ `hY`ZJW`!hc!ZJW`gYgg]cbg``  
Mci`f`ZYXVUW`]g`ja`dcfh]bhc`Ybgi`fY`hUhci`fWci`fgY`XY`]j`Yfm]g`a`YYh]b[ `gh`XYbhbyYXg``K`Y`UfY`cc\_]b[  
hck`UfXg`ghfYUa`]b]b[ `hY`cb`]bY`Wci`fgY`a`cXi`Yg`UbX`Uj`Y`i`gYX`dUghZYXVUW`hc`]a`dfcj`Y`XY`]j`Yfm``





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 gZ`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[ YgZ`UfhUbX`XYg][ b`dfc`YWgZ`Ug`k Y`Ug  
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`Ub[ ]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`Z`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[ Y`hYf`ei chYg`UbX`dUfUd`fUgYg`]bhc`U`bYk`k \c`Yz`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`XUHY`Zc`f`Zc`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'Wc'dmf][ \hžI BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5W'W'dhUV'Y'I gY'cZ I BGK '⇒H'F'Ygci f'W'g'Dc`]W'h
- VY'Uk UfY'cZ'Y'ghUbxUfXg'cZVY\Uj ]ci f'YI dY'W'X'cZYj Yfmcby'j]b'h'Y'I BGK 'W'a a i b]m
- `cW'W'h'gYfj ]W'g'UbX'j]bZcfa U]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZ'Y'gY'UfY'Ug'k ]`VY'ZJa ]]Uf'hc'mci ž'c'h'Y'fg'k ]`VY'bYk "; U]b]b[ 'U'gc`X'i bXYfghUbx]b[ 'cZU`'h'Y fY'U'Y'X'UgdY'W'g'cZ9@G9'k ]`'Y'd'mci 'a U\_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\h'c.##j V'Y'W'i \]X'Y'g"\]VfUfm'i bgk "Y'X'i "U'i #' \]g'Y#\]V'c'i h' \]g'Y](#)

5 WUXYa ]WbZcfa Uh]cb`

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

- fYei Ygh]Zc`fYI hYbg]cb/
- `UhY`gi Va ]gg]cbg`[ i ]XY`]bYg/
- fYj ]Yk `cZa Uf\_g/
- I BGK `<YU`h`UbX`GUZY`midc`]WYg/

