



# ARTS2040

; `cVU`@jHfUhi fYg. '5Xj Ybhi fYg'k jh 'h\Y''7 cbH'a dcfUfm  
7 `UggjW`

HYfa `C.bY`##`&\$&\$



GWXcc`cZH\Y`5ftg`UbX`A`YXJU`..##`I`BGK`..5ftg`UbX`GcWJU`..GWYbWg

7ci fgY`Cj Yfj JYk

`GHUZZ7cbhUWhi8YHU]`g`

`7cbj Ybcfg`

B Ua Y	9a U]`	5j U]UV]]m	@cWWhcb	D\cbY
: ]cbU`A cff]gcb	Za cff]gcb4 i bgk "YXi "Ui	K YX`%#%&	K YVghYf`&\$-	- ' , ) ) &+)

GWx cc ``7cbhUWhi`bZcfa Uh]cb

F cca " %&Z`Yj Y`` `F cVYfhK YVghYf`6i ]X]b[

D\cbY. f\$&L`- ' , ) `( , ) \*

9a U]: [gUa 4 i bgk "YXi "Ui](#)

K YVg]hY: [\hhdg.#gUa "Ufhg"i bgk "YXi "Ui](#)

H\Y`GWx cc ``cZhY`5fng`UbX`A YX]U`k ci `X``\_Y`hc`F YgdYWwZ ``m5W\_bck`YX[Y`hY`HfUX]h]cbU``7i g]cX]Ubgz`hY`6YXY[ U`fP`Ybg]b[ hc b`WJa di gLz; UX][ U`f7 ]mUbX`5fh/`8Yg][ b`7 Ua di gYgE`UbX`hY`B [ i bbUk U`dYcd`Y`f5i ghfU]Ub`8YZYbWw: cfWw`5WUXYa m]b`7 UbVYffUe`cZhY`UbXg`k \YfY`YUWw`WJa di g`cZI`BGK`]g`cWWhYX"

7 ci fgY'8YHJ]`g

7 fYX]hDc]bqg \*`

Gi a a UfmicZ`h`Y'7 ci fgY

K \Yb'k Y'fYUX`W`bH`a dcfUfm`h`fUhi fYž\ck `Xc`k Y`\_bck `k \Uh]g`j U`i UV`Yž[ ccX`cf`Ugh]b[ 3`8c`k Y`  
]a a YX]UH`mifY`W`[ b]gY`U`"WUgg]W`"k cf`\_Vm]hg`gW`dYž`W`a d`YI ]m]UbX`W`U`Yb[ Y`cf`]hg`XUf]b[ ž`VYU`i hmicf`  
X]gg]XYbW`3`<ck `UbX`k \mXcYg`h`Y`"WUgg]W`"h`I hYa Yf[ Y`]b`h`Y`dfYgYbB`H`ci [ \`"W`bH`a dcfUfm`  
WUgg]W`"gci bXg`\_Y`U`d]h`W`i gYX`V`m`di V`]g`Y`fgž`]g`h`]g`U`h`Y`fa` `h`U`ha` ][ \h`Y`b`U`V`Y`X`]g`W`gg]cb`c`Z`f]W` `UbX`  
W`a`d`Y`]b[ `]h`fUfmk`cf`\_g`Z`ca` `h`Y`"Ugh`h`]f`mim`Y`U`fg`3

H`Y`[ fci`d`c`Z`W`bH`a dcfUfm`h`fUfmk`cf`\_g`h`U`h`k`Y`a` ][ \h`W`"WUgg]W`" ]g`U`b`]b`h`Y`bg`Y`m[ `c`V`U`"cb`Y`"  
; `c`V`U`]g`U`h`cb`\Ug`\U`X`U`i [ Y`]a`d`U`V`h`cb`]h`fUfm`d`f`c`X`i` W`]cb.`]h`fUfm`di`V`]g`\]b[ `UbX`k`c`f`X`m`f`Y`U`X`]b[ `U`f`Y`  
bck`f`]W`m[ `c`V`U`]g`Y`X`U`W`h`]h`Y`g`Z`f`h`cg`Y`k`]h`Z`f`g`h`k`c`f`X`U`W`W`gg`"H`]g`W`ci`fg`Y`Z`c`W`gg`Y`g`cb`]h`fUfm`  
U`Y`g`h`Y`h`W`U`g`d`Y`W`g`c`Z[ Y`b`f`Y`ž`b`U`f`U`h`j`Y`U`b`X`]h`fUfm`U`b[ i`U[ Y`f`]b`W`X`]b[ `k`cf`\_]b`h`f`U`b`g`U`h`]cb`ž`U`g`k`Y`"U`g`  
dcg]b[ `g`ca`Y`k`]X`Y`f`ei`Y`g`h`cbg`U`V`ci`h`f`Y`W`d`h`]cb`U`b`X`f`Y`di`h`U`h`cb`" "h`U`b`X`Y`a` `k`]h`\_Y`m`Z`c`f`U`m`g`]b`h`c`[ `c`V`U`  
]h`fUfm`h`Y`c`f`n`ž`h`]g`W`ci`fg`Y`k`]`d`f`c`j`]X`Y`d`f`U`W`h`W`"W`]h`W`"f`Y`g`ci`f`W`g`Z`c`f`Y`U`X`]b[ ž`X`]g`W`gg]b[ ž`k`f`]h`b[ ž`  
f`Y`j`Y`k`]b[ `UbX`h`Y`U`W`]b[ [ `c`V`U`#`W`bH`a dcfUfm`bc`j`Y`g`ž`d`c`Y`a`g`U`b`X`d`U`m`g`"K`Y`k`]`h`]b`\_U`V`ci`h`d`f`n`Y`g`U`b`X`  
k`Y`a`U`m`Y`j`Y`b`j`c`h`Y`c`b`c`i`f`c`k`b`W`bH`a dcfUfm`"gi`d`Y`f`W`U`gg]W`"6`m`h`Y`Y`b`X`c`Z`h`Y`W`ci`fg`Y`ž`k`Y`k`]`U`j`Y`  
h`ci [ \h`U`V`ci`h`6`U`f`h`Y`g`f`"d`Y`U`gi`f`Y`g`c`Z`h`Y`h`I`h`"U`b`X`U`j`Y`h`Y`g`h`X`#`U`c`7`U`j`]b`c`f`]W`U`]a`h`U`h`"U`W`U`gg]W`]g`U`  
k`cf`\_k`\]W`W`b`g`h`U`b`h`m[ Y`b`Y`f`U`h`g`U`di`j`]g`W`U`f`W`ci`X`c`Z`W`]h`W`X`]g`W`ci`fg`Y`U`f`ci`b`X`]h`ž`Vi`h`k`\]W`U`k`U`m`g`  
g`U`\_Y`g`h`Y`d`U`f`h`W`Y`g`c`Z`"

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

- % 9I`d`U`]b`U`bi`a`V`Y`f`c`Z`h`Y`c`f`Y`h`]W`" ]ggi`Y`g`]b[ `c`V`U`"U`b`X`h`f`U`b`g`b`U`h`]cb`U`k`f`]h`b[ `UbX`U`b`U`m`g`Y`" ]h`fUfm`U`b`X`  
Z`a` `h`I`h`g`h`c`"c`W`h`Y`h`Y`g`[ b]Z`W`b`W`U`b`X`c`d`Y`f`U`h`]cb`c`Z`h`Y`g`Y` ]ggi`Y`g`
- &" 5b`U`m`g`Y`U`f`U`b[ Y`c`Z`k`U`m`g`]b`k`\]W`h`Y`ei`Y`g`h`cb`c`Z`]h`fUfm`j`U`i`Y`U`b`X`]h`fUfm`Z`c`fa` `Y`a`Y`f[ Y`g`]b`h`Y`  
W`b`H`I`h`c`Z[ `c`V`U`" ]h`fUhi`f`Y`g`U`W`c`gg`U`f`U`b[ Y`c`Z[ Y`b`f`Y`g`"
- ' " 9a`d`c`m`U`W`]h`W`"U`b`X`h`Y`c`f`Y`h`]W`"m]b`Z`c`fa`Y`X`U`d`d`f`c`U`W`h`c`h`I`h`g`i`b`X`Y`f`X`]g`W`gg]cb`ž`U`d`d`f`c`d`f`]U`h`m`  
gi`d`d`c`f`h`X`V`m`g`W`c`U`f`m`f`Y`g`ci`f`W`g`"
- (" 7`c`b`g`h`i`W`h`i`W`X`k`f`]h`Y`b`U`f[ i`a`Y`b`h`g`V`U`g`Y`X`i`d`c`b`W`c`g`Y`U`b`U`m`g`]g`c`Z`]h`fUfm`U`b[ i`U[ Y`ž`Y`h`]W`"i`g`Y`c`Z`  
g`W`c`U`f`m`f`Y`g`ci`f`W`g`ž`U`b`X`h`Y`\_Y`m`h`Y`c`f`Y`h`]W`"W`b`W`d`f`g`h`i`W`h`f`]b[ `h`Y`W`ci`fg`Y`"

HYUW`]b[ `G`h`f`U`h`[ ]Y`g`

H`]g`W`ci`fg`Y`k`]`b`f`c`X`i`W`g`h`X`Y`b`h`g`h`c`h`Y`Z`Y`X`c`Z[ `c`V`U`"U`b`X`k`c`f`X`" ]h`fUfm`g`h`i`X`]Y`g`U`h`g`Y`W`b`X`!`m`Y`U`f`Y`j`Y`"  
H`Y`W`ci`fg`Y`k`]`V`Y`c`f[ U`b`]g`Y`X`W`f`c`b`c`[ ]W`"n`ž`g`c`h`U`h`g`h`i`X`Y`b`h`g`W`b`]X`Y`b`h`ž`m`U`b`X`X`]g`W`gg`h`Y`W`X`U`b[ ]b[ `]X`Y`U`  
U`b`X`]a`d`c`f`U`b`W`c`Z`X`Z`Y`f`Y`b`h`\_]b`X`g`c`Z`]h`fUfm`j`U`i`Y`d`Y`f`W`]j`Y`X`]b`X`Z`Y`f`Y`b`h`" ]h`fUfm`h`I`h`g`c`j`Y`f`h`a`Y`"

## 5ggYgga Ybh

=\Uj Y'gYhik c'UggYgga Ybhg" H\Y`c[ 'UggYgga Ybhk ]`gi ddcfigca Y'fYUX]b[ ' ]b'hYcf]Yg'cZk cfX ]hYfUh fYz'UbX'Zcfa 'U'gWJZc`X'Zc'f'hY'a U'cf'YggUmXi Y'Uh'hY'VY[ ]bb]b[ 'cZK YY\_`%"`

## 5ggYgga YbhHUg\_g`

5ggYgga YbhHUg_	K Y][ \h	8i Y'8UH	Gh XYbh@YUfb]b[ Ci hWta Yg'5ggYggYX
F YUX]b[ 'UbX'F YgYUfW`@c[ ' ]	( \$i	%/g\$' #&\$&\$ \$- .\$\$'5A	%z&Z
A U'cf'9ggUm	* \$i	&+/#\$ ( #&\$&\$ \$) .\$\$'DA	&Z ž(

## 5ggYgga Ybh8YHJ]`g

5ggYgga Ybh% 'F YUX]b[ 'UbX'F YgYUfW`@c[

GhYfhXUH. `

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

8YHJ]`g. %) \$\$'k cfXg' ]b'hcH`"H\ ]g'hUg\_`dfcj ]XYg'gWJZc`X]b[ 'Zc'f'hY'YggUm: YYXVUW\_`UbX'bi a Yf]W`'[ fUXY j ]U'@A G"

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

H\Y'fYUX]b[ `c[ 'gi Va ]gg]cb'k ]`Wta df]gY'hY" `c[ g'fcZ) \$\$'k cfXg'YUW`E'hUhfY'Xi Y'UhK YXbYgXUm -Ua `cZk YY\_g`&Z `UbX(' "H\Y'K YY\_(`gi Va ]gg]cb'k ]`VY'U'XcW a Ybh'hU'hWta V]bYg'U`h'fY`c[ g'Zc'f k f]hYb'ZYXVUW\_"H\Y`c[ g'Zc'f'k YY\_g`&UbX" `hUhfY'Xi Y'Uh- Ua `cb'K YXbYgXUm'cZ'hY]f'fYgdYW]j Y k YY\_g'k ]`cb'mfYW]j Y'U`hY'ZYXVUW\_"Hc'fYdYUhf' hY'Z]bU`c[ ' ]b'k YY\_(`k ]`VY'UXXYX'hc`c[ g'%UbX'& hc'a U\_Y'cbY'XcW a Ybh'cZ%) \$\$'k cfXg'UbX'h ]g'k ]`fYW]j Y'gi gh]bYX'ZYXVUW\_"

5ggYgga Ybh& `A U'cf'9ggUm

GhYfhXUH. `Bch5dd`]WVY

@Yb[ h. `&\$\$\$!&) \$\$

8YHJ]`g. `&ž) \$\$'k cfXg"K f]hYb'ZYXVUW\_`UbX'bi a Yf]W`'[ fUXY'j ]U'@A G"



F Ygci fWg

DfYgWf]VYX`F Ygci fWg`

6cc\_g`WJb`VY`Zci bX`]b`h`Y`I` BGK` `Vcc\_g`cd`UbX`Zca` fYdi`hUV`Y`fYhU`]Yfg

A ccX`Y`UbX`@Y[`Ubh`k`]`dfcj`]XY`ch`Yf`fYgci fWg

F YWca a YbXYX`F Ygci fWg

BchUj U]UV`Y



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

D`U[ ]Uf]ga `]g`i g]b[ `h`Y`k cfXg`cf]XYUg`cZchYfg`UbX`dfYgYbh]b[ `h`Ya `Ug`mci f`ck b" `h`WUb`hU`Y`a Ubm  
Zcfa gž`Zca `XY`]VYfUh`W`YU]b[ `h`UW]XYbhU`miW`dm]b[ `Zca `U`gci fW`k ]h`ci hUW\_bck `YX[ Ya Ybh`

I BGK `[ fci dg`d`U[ ]Uf]ga `]b`h`Y`Zc`ck ]b[ `W]hY[ cf]Yg.

7 cdm]b[ .`i g]b[ `h`Y`gUa Y`cf`j Yfmg]a ]Uf`k cfXg`h`h`Y`cf][ ]bU`hI hcf]XYU`k ]h`ci hUW\_bck `YX[ ]b[ `h`Y



- 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][ \hž' 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'Ĥ'Y'ghUbxUfXg'cZVY\Uj ]ci f'YI dY'W'X'cZYj Yfmcby`]b'Ĥ'Y'I BGK 'W'a a i b]m
- `cW'Ĥ'gYfj ]W'g'UbX'j]bZ'fa U]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

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

[\h'hd.##gi V'Y'W'i \]X'Yg"\]\]VfUfm'i bgk "YXi "Ui #' \]gY#\]Vci h' \]gY](#)

5 WXYa ]WbZcfa Uhcb`

: cfYggYbhU`ghi XYbh]bZcfa Uhcb`fY`Uh]b[ `rc.