



PERAC HITS THE ROAD

2022 BOARD ADMINISTRATOR TRAINING

# Calculation Basics



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# Calculation Basics

- Introduction
- Retirement Allowance Basics
- Superannuation
- Accidental Disability
- Ordinary Disability
- Section 12(2)(d)
- Accidental Death



# Retirement Allowance Basics

- Retirement Allowance is the sum of:
  - Annuity
  - Pension
- Retirement Options
  - Option A – *Life Annuity*
    - Benefits cease upon member's death
    - No beneficiaries
  - Option B – *Cash Refund Annuity*
    - Upon member's death, refund balance in Annuity Reserve Fund (if any)
    - Can name anyone as beneficiary (could have multiple beneficiaries)
    - Can change beneficiary as often as you want, including upon current beneficiary's death
  - Option C – *Joint and Last Survivor Annuity*
    - If member dies first – beneficiary receives 2/3
    - If beneficiary dies first – member "pops-up" to Option A
    - Only one beneficiary may be chosen from a limited list

## NOTES:



## Superannuation – Pre 4/2/12

- Eligibility
  - Groups 1 and 2
    - Age 55 with 10 years of service [§5(1)(a), 5(1)(m)], or
    - 20 years of service at any age [§10(1)]
  - Group 4
    - Age 55 [§5(1)(a), 5(1)(m)], or
    - 20 years of service at any age [§10(1)]
- Allowance Formula
  - (3-yr. avg. salary) x (age/group factor) x (total credited service)
  - Veterans' allowance
  - 80% limitation



## Superannuation (Pre 4/2/12) – Example

- Member's Age: 55 years, 5 months
- Beneficiary's Age: 58 years, 9 months
- Job Group 1
- Veteran
- Service: 14 years, 11 months
- 3-year average salary: \$18,533.33
- ASF Balance: \$35,000.00

### NOTES:

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## Superannuation (Pre 4/2/12) - Example: Option (A)

### ■ Calculation of Allowance

3-year avg. salary	18,533.33	
x age factor	0.015	
= Base	278.00	
x Cred Service	14.9167	
= Allowance	4,146.84	
Div. by 12	345.57	
Mult. by 12	4,146.84	(1)
80% of 3-yr. avg.	14,826.66	
Div. by 12	1,235.56	
Mult. by 12	14,826.72	(2)
Allowance	4,146.84	lesser of (1) and (2)
+ Vet. Benefit	225.00	
Total Allowance	4,371.84	

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## Superannuation (Pre 4/2/12) -Example: Option (A) (Cont'd)

### ■ Allocation of Allowance to Annuity and Pension

Accumulated Deductions	35,000.00
Option (A) Annuity Factor	0.00701
Monthly Annuity	245.35
Annual Annuity	2,944.20
Annual Pension	1,427.64
Annual Allowance	4,371.84
Monthly Allowance	364.32

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### NOTES:



## Superannuation (Pre 4/2/12) - Example: Option (B)

### Allocation of Allowance to Annuity and Pension

	Option (A)	Option (B)
Accumulated Deductions	35,000.00	35,000.00
Annuity Factor	0.00701	0.00686
Monthly Annuity	245.35	240.10
Annual Annuity	2,944.20	2,881.20
Annual Pension	1,427.64	1,427.64
Annual Allowance	4,371.84	4,308.84
Monthly Allowance	364.32	359.07



## Superannuation (Pre 4/2/12) - Example: Option (C)

### Allocation of Allowance to Annuity and Pension

245.35 Mon. Opt A Annuity	x .9445 X Opt C Factor	= 231.73 = Mon. Opt C Annuity	= 231.72 = Final Mon. Opt C Annuity (Divisible by 3)	2,780.64 x 12 = Ann. Opt C Annuity
			113.43 Mon. Opt C Pension	1,361.16 Ann. Opt C Pension
345.57 Mon. Opt A Allow (w/out Vet Ben)	x .9445 X Opt C Factor	= 326.39 = Mon. Opt C Allow	+18.75 + Mon. Vet Ben	= 345.15 = Final Mon. Opt C Allow (Divisible by 3)
				= 4,141.80 x 12 = Ann. Opt C Allow

### NOTES:

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## Superannuation – Post 4/2/12

- Eligibility
  - Group 1
    - Age 60 with 10 years of service [§§5(1)(a), 5(1)(m)]
  - Group 2
    - Age 55 with 10 years of service [§§5(1)(a), 5(1)(m)]
  - Group 4
    - Age 55 [§§ 5(1)(a), 5(1)(m)]
- Allowance Formula
  - (5-yr. avg. salary) x (age/group factor) x (total cred. service)
  - Veterans' allowance
  - 80% limitation



## Superannuation (Post 4/2/12) – Example

- Member's Age: 60 years, 5 months
- Job Group 1
- Non-veteran
- Service: 14 years, 11 months
- 5-year average salary: \$18,533.33
- ASF Balance: \$35,000.00

### NOTES:



## Superannuation (Post 4/2/12) - Example: Option (A)

### ■ Calculation of Allowance

5-year avg. salary	18,533.33	
x age factor	0.0145	
= Base	268.73	
x Cred Service	14.9167	
= Allowance	4,008.56	
Div. by 12	334.05	
Mult. by 12	4,008.60	(1)
80% of 5-yr. avg.	14,826.66	
Div. by 12	1,235.56	
Mult. by 12	14,826.72	(2)
Allowance	4,008.60	lesser of (1) and (2)
+ Vet. Benefit	0.00	
Total Allowance	4,008.60	

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## Superannuation (Post 4/2/12) -Example: Option (A) (Cont'd)

### ■ Allocation of Allowance to Annuity and Pension

Accumulated Deductions	35,000.00
Option (A) Annuity Factor	0.00759
Monthly Annuity	265.65
Annual Annuity	3,187.80
Annual Pension	820.80
Annual Allowance	4,008.60
Monthly Allowance	334.05

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### NOTES:

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## Pro-Ration of Benefits By Group

- Added to § 5(2)(a) of Chapter 32 by Section 14 of Chapter 176 of the Acts of 2011
  - Optional for Pre 4/2/12 members
  - Mandatory for Post 4/2/12 members
- Superannuation benefit prorated according to percentage of years in each group
- See PERAC Memo #29/2012

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## Pro-Ration of Benefits By Group – Example

- Member's Age: 60 years, 0 months
- Beneficiary's Age: 58 years, 9 months
- Non-veteran
- Job Group 1: 20 years, 0 months
- Job Group 4: 5 years, 0 months
- 5-year average salary: \$50,000.00
- ASF Balance: \$45,000.00

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### NOTES:





## Pro-Ration of Benefits By Group – Example: Option A

### ■ Calculation of Allowance

- Group 1:  $(\$50,000)(.0145)(20) = \$14,499.96$
- Group 4:  $(\$50,000)(.025)(5) = \$6,249.96$
- Sum:  $\$14,499.96 + \$6,249.96 = \$20,749.92$  (1)
- 80% Limit:  $(80\%)(\$50,000) = \$39,999.96$  (2)
- Allowance:  $\$20,749.92$  lesser of (1) and (2)

**Note:** All Figures have been adjusted for equal monthly payments



## Pro-Ration of Benefits By Group – Example: Option A (Cont'd)

### ■ Allocation to Annuity and Pension

Accumulated Deductions	50,000.00
Option (A) Annuity Factor	0.00759
Monthly Annuity	379.50
Annual Annuity	4,554.00
Annual Pension	16,195.92
Annual Allowance	20,749.92
Monthly Allowance	1,729.16

### NOTES:

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## Pro-Ration of Benefits By Group – Example: Option B

### Allocation of Allowance to Annuity and Pension

	Option (A)	Option (B)
Accumulated Deductions	50,000.00	50,000.00
Annuity Factor	0.00759	0.00733
Monthly Annuity	379.50	366.50
Annual Annuity	4,554.00	4,398.00
Annual Pension	16,195.92	16,195.92
Annual Allowance	20,749.92	20,593.92
Monthly Allowance	1,729.16	1,716.16

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## Pro-Ration of Benefits By Group – Example: Option C

### Allocation of Allowance to Annuity and Pension

379.50	x .9099	= 345.31	= 345.30	4,143.60
Mon. Opt A Annuity	X Opt C Factor	= Mon. Opt C Annuity	= Final Mon. Opt C Annuity (Divisible by 3)	x 12 = Ann. Opt C Annuity
			1,228.05	14,736.60
			Mon. Opt C Pension	Ann. Opt C Pension
1,729.16	x .9099	= 1,573.36	+ 0.00	= 18,880.20
Mon. Opt A Allow (w/out Vet Ben)	X Opt C Factor	= Mon. Opt C Allow	+ Mon. Vet Ben	= Final Mon. Opt C Allow (Divisible by 3)
				x 12 = Ann. Opt C Allow

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### NOTES:



## Accidental Disability

- Eligibility
  - Permanently disabled
  - Job-related
  - No minimum age/service requirements
- Allowance Formula
  - $(72\% \times \text{salary}) + \text{annuity}$ 
    - If hired after January 1, 1988, or not continuously a member in service since January 1, 1988, then 75% limit on allowance
  - Veterans' allowance (local option)
  - Additional dependent allowance

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## Accidental Disability - Example

- Member's Age: 49 years, 0 months
- Job Group 4
- Non-veteran
- Service: 9 years, 0 months
- Annual salary: \$35,000.00
- ASF Balance: \$25,000.00
- Retirement Date: January 1, 2017
- Membership Date: January 1, 2008

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### NOTES:

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## Accidental Disability – Example: Option (A)

### ■ Calculation of Allowance

Annual Rate of Regular Compensation:	35,000.00	
x 72%:	0.72	
= Pension	25,200.00	
Div. by 12	2,100.00	
Mult. by 12	25,200.00	(a)
Accumulated Deductions:	25,000.00	
Annuity Factor:	0.00654	
Monthly Annuity:	163.50	
Annual Annuity:	1,962.00	(b)
= Uncapped Allowance:	27,162.00	(1) = (a) + (b)
75% of Ann. Rate of Reg. Comp.:	26,250.00	
Div. by 12	2,187.50	
Mult. by 12	26,250.00	(2) = capped allowance
Accidental Disability Allowance:	26,250.00	lesser of (1) and (2)



## Accidental Disability – Example: Option (A) (Cont'd)

### ■ Allocation of Allowance to Annuity and Pension

Accumulated Deductions	25,000.00
Option (A) Annuity Factor	0.00654
Monthly Annuity	163.50
Annual Annuity	1,962.00
Annual Pension	24,288.00
Annual Allowance	26,250.00
Monthly Allowance	2,187.50

### NOTES:





## Ordinary Disability - Pre 4/2/12

- Eligibility
  - Permanently disabled
  - Not job-related
  - 10 years of service
- Allowance Formula
  - Veterans
    - $(50\% \times \text{salary}) + \text{annuity}$
  - Non-Veterans
    - $(3\text{-yr. avg. salary}) \times (\text{age/group factor}) \times (\text{total credited service})$ 
      - If younger than age 55, use age 55 factor
      - If age 55 or older, use factor at actual age
    - 80% limitation



## Ordinary Disability (Non-Veteran) - Pre 4/2/12 Example

- Member's Age: 49 years, 0 months
- Job Group 4
- Non-veteran
- Service: 16 years, 11 months
- 3-year average salary: \$36,666.67
- ASF Balance: \$44,000.00

### NOTES:

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## Ordinary Disability (Non-Veteran) - Pre 4/2/12 Example: Option (A)

### ■ Calculation of Allowance

3-year avg. salary	36,666.67	
x age factor	0.025	(factor for age 55)
= Base	916.67	
x Cred Service	16.9167	
= Allowance	15,507.03	
Div. by 12	1,292.25	
Mult. by 12	15,507.00	(1)
80% of 3-yr. avg.	29,333.34	
Div. by 12	2,444.45	
Mult. by 12	29,333.40	(2)
Total Allowance	15,507.00	lesser of (1) and (2)

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## Ordinary Disability (Non-Veteran) - Pre 4/2/12 Example: Option (A) (Cont'd)

### ■ Allocation of Allowance to Annuity and Pension

Accumulated Deductions	44,000.00	
Option (A) Annuity Factor	0.00654	(factor for actual age)
Monthly Annuity	287.76	
Annual Annuity	3,453.12	
Annual Pension	12,053.88	
Annual Allowance	15,507.00	
Monthly Allowance	1,292.25	

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### NOTES:



## Ordinary Disability (Veteran) - Example

- Member's Age: 57 years, 10 months
- Job Group 4
- Veteran
- Service: 15 years, 0 months
- Annual salary: \$50,000.00
- ASF Balance: \$30,000.00



## Ordinary Disability (Veteran) - Example: Option (A)

### ■ Calculation of Allowance

Annual Rate of Regular Compensation:	50,000.00
x 50%:	0.50
= Pension	25,000.00
Div. by 12	2,083.33
Mult. by 12	24,999.96 (a)

Accumulated Deductions:	30,000.00
Annuity Factor:	0.00733
Monthly Annuity:	219.90
Annual Annuity:	2,638.80 (b)
= Allowance:	27,638.76 (1) = (a) + (b)

### NOTES:

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## Ordinary Disability - Post 4/2/12

- Eligibility
  - Permanently disabled
  - Not job-related
  - 10 years of service
- Allowance Formula
  - Veterans
    - $(50\% \times \text{salary}) + \text{annuity}$
  - Non-Veterans
    - $(5\text{-yr. avg. salary}) \times (\text{age/group factor}) \times (\text{total credited service})$ 
      - Group 1
        - » If younger than age 60, use age 60 factor
        - » If age 60 or older, use factor at actual age
      - Groups 2 and 4
        - » If younger than age 55, use age 55 factor
        - » If age 55 or older, use factor at actual age
    - 80% limitation



## Ordinary Disability (Non-Veteran) - Post 4/2/12 Example

- Member's Age: 49 years, 0 months
- Job Group 4
- Non-veteran
- Service: 16 years, 11 months
- 5-year average salary: \$36,666.67
- ASF Balance: \$44,000.00

### NOTES:



## Ordinary Disability (Non-Veteran) - Post 4/2/12 Example: Option (A)

### ■ Calculation of Allowance

5-year avg. salary	36,666.67	
x age factor	0.022	(factor for age 55)
= Base	806.67	
x Cred Service	16.9167	
= Allowance	13,646.19	
Div. by 12	1,137.18	
Mult. by 12	13,646.16	(1)
80% of 5-yr. avg.	29,333.34	
Div. by 12	2,444.45	
Mult. by 12	29,333.40	(2)
Total Allowance	13,646.16	lesser of (1) and (2)



## Ordinary Disability (Non-Veteran) - Post 4/2/12 Example: Option (A) (Cont'd)

### ■ Allocation of Allowance to Annuity and Pension

Accumulated Deductions	44,000.00	
Annuity Factor	0.00654	(factor based on actual age)
Monthly Annuity	287.76	
Annual Annuity	3,453.12	
Annual Pension	10,193.04	
Annual Allowance	13,646.16	
Monthly Allowance	1,137.18	

### NOTES:

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## Section 12(2)(d) - Pre 4/2/12

### ■ Eligibility

- Member dies before retirement, not job-related
- If beneficiary is nominated
  - No minimum age/service requirement
- Spousal election
  - Can elect even if someone else is nominated as Option (d) beneficiary
  - 2 years of creditable service
  - Married at least 1 year and living together (or apart for justifiable cause)

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## Section 12(2)(d) - Pre 4/2/12 (Cont'd)

### ■ Allowance Formula

- The Option C allowance the member would have received had he/she attained age 55 on the date of death, or actual age if older than 55
- (3-yr. avg. salary) x (age/group factor) x (total cred. service)
- Minimum allowance (\$3,000 or \$6,000) (local option)
  - Spouse only
  - Member-in-service
  - 2 years of creditable service
  - Married at least 1 year and living together (or apart for justifiable cause)
- Veterans' allowance
- Dependent allowance

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### NOTES:





## Section 12(2)(d) - Pre 4/2/12 Example

- Member's Age: 49 years, 0 months
- Beneficiary's Age: 58 years, 5 months
  - Option C factor is based on member age 55 and beneficiary age 64
- Job Group 1
- Non-veteran
- Service: 16 years, 11 months
- 3-year average salary: \$36,666.67
- ASF Balance: \$44,000.00



## Section 12(2)(d) -Pre 4/2/12 Example (Cont'd)

### ▪ Calculation of Allowance

3-year avg. salary	36,666.67	
x age factor	0.015	(factor for age 55)
= Base	550.00	
x Cred Service	16.9167	
= Allowance	9,304.19	
Div. by 12	775.35	
Mult. by 12	9,304.20	(1)
80% of 3-yr. avg.	29,333.34	
Div. by 12	2,444.45	
Mult. by 12	29,333.40	(2)
Allowance	9,304.20	lesser of (1) and (2)
+ Vet. Benefit	0.00	
Total Opt. A Allowance	9,304.20	
Mo. Option D Allowance	741.39	= 775.35 x .9562 (divisible by 3)
Ann. Option D Allowance	8,896.68	

### NOTES:

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## Section 12(2)(d) - Pre 4/2/12 Example (Cont'd)

### Allocation of Allowance to Annuity and Pension

Accumulated Deductions	44,000.00	
Annuity Factor	0.00733	(Based on beneficiary's actual age)
Monthly Annuity	322.52	
Annual Annuity	3,870.24	
Annual Pension	5,026.44	
Annual Allowance	8,896.68	
Monthly Allowance	741.39	



## Section 12(2)(d) - Post 4/2/12

- Eligibility
  - Same as for Pre 4/2/12
- Allowance Formula
  - Group 1
    - The Option C allowance the member would have received had he/she attained age 60 on the date of death, or actual age if older than 60
  - Groups 2 and 4
    - The Option C allowance the member would have received had he/she attained age 55 on the date of death, or actual age if older than 55
  - (5-yr. avg. salary) x (age/group factor) x (total cred. service)
  - Minimum allowance (\$3,000 or \$6,000) (local option)
    - Spouse only
    - Member-in-service
    - 2 years of creditable service
    - Married at least 1 year and living together (or apart for justifiable cause)
  - Veterans' allowance
  - Dependent allowance

### NOTES:



## Section 12(2)(d) – Post 4/2/12 Example

- Member's Age: 49 years, 0 months
- Beneficiary's Age: 58 years, 5 months
  - Option C factor is based on member age 60 and beneficiary age 69
- Job Group 1
- Non-veteran
- Service: 16 years, 11 months
- 5-year average salary: \$36,666.67
- ASF Balance: \$44,000.00

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## Section 12(2)(d) – Post 4/2/12 Example (Cont'd)

### ▪ Calculation of Allowance

5-year avg. salary	36,666.67	
x age factor	0.0145	(factor for age 60)
= Base	531.67	
x Cred Service	16.9167	
= Allowance	8,994.10	
Div. by 12	749.51	
Mult. by 12	8,994.12	(1)
80% of 5-yr. avg.	29,333.34	
Div. by 12	2,444.45	
Mult. by 12	29,333.40	(2)
Allowance	8,994.12	lesser of (1) and (2)
+ Vet. Benefit	0.00	
Total Opt. A Allowance	8,994.12	
Mo. Option D Allowance	706.20	= 749.51 x .9422 (divisible by 3)
Ann. Option D Allowance	8,474.40	

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### NOTES:

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## Section 12(2)(d) - Post 4/2/12 Example (Cont'd)

### ■ Allocation of Allowance to Annuity and Pension

Accumulated Deductions	44,000.00	
Annuity Factor	0.00733	(Based on beneficiary's actual age)
Monthly Annuity	322.52	
Annual Annuity	3,870.24	
Annual Pension	4,604.16	
Annual Allowance	8,474.40	
Monthly Allowance	706.20	



## Accidental Death

- Eligibility
  - If member in service, die from an injury sustained or hazard undergone in the performance of duties, or
  - If previously retired for accidental disability, die from the same disabling cause
- Allowance Formula
  - Member in service
    - Return of Accumulated Deductions in Annuity Savings Fund in addition to,
    - An allowance equal to (72% x salary)
    - Dependent allowance
  - Accidental disability retiree
    - Greater of (72% x salary at the time of retirement), or current pension amount of accidental disability retirement allowance on the date of death
    - Dependent allowance
    - NO return of Accumulated Deductions unless member elected Option B

### NOTES:



## Conclusion

- Many different types of benefits
  - Superannuation and Accidental Disability most common
- Can pick any option for non-death benefits
- Different rules for post 4/2/12 hires
  - Should review manual calculations and not rely solely on computer generated calculations

### NOTES:

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**COMMONWEALTH OF MASSACHUSETTS**

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