

What is a CAUT?

- Piano technician
 - Tuning, service, benches, humidity, rebuilding
- Bean counter • Inventory, expenses, budget, parts, supplies
- Administrator
 - Scheduling, ordering, bills, selling, moving pianos
- Strategist, educator, value provider...
- Educating, teaching, training, community outreach, adding value

What is a CAUT?

Solution provider

What is a CAUT?

Solution provider

- Enabling:
- People (Students, faculty, guest artists)
- Ideas
- Creativity



Why become a CAUT?

- Steady job
- Underpaid, but good benefits
 - Health insurance (on your own: \$25-35k for family plan)
 Pension
 - Half of social security tax (12.4%), half of medicare tax (2.9%)

Why become a CAUT? • Springboard into community • Enables building a thriving private practice all had been block

How to become a CAUT?

- Strong tuning, regulation, repair skills
- PTG RPT status
- Manufacturers' trainings and certifications
- Reliable, dependable, disciplined
- Willing and able to work early and/or late, irregular schedule
- Apply for jobs early, network (attend PTG conferences)
- Approach head techs at large schools?
- Internship?

They called you!

- Show interest in the school
- Prepare for interview by learning:
 - Who is in charge
 - Kev faculty members
 - Notable alums
 - · School's strengths, mission
 - Sources of funding (endowment, special purpose funds)
 - Events they sponsor (competitions, summer programs, conferences, meetings, galas)
 - Programs they offer (Evening school? Precollege? Community? Camps? Summer school)
 - · Special events (conferences, meetings)

If offered the job, negotiate:

- Expectations
- Commitments
- Additional pay for extra venues, other departments, commercial events?
- Private work off and on campus allowed? (if interested)
- Use of shop for private work?

Expectations:

- Full time/part time
- Salary
- Work hours
- Add'l hours (overtime rules)
- · Evenings (recitals), weekends
- Benefits (health, dental, vision, retirement, life insurance, transit)
- · Vacation and time restrictions
- Pay raises
- Territory (Other buildings? Off campus?)
- · Piano moving?
- Disposal: selling, auctioning, donating

- Rebuilding (Internal v. external: action, strings, belly)
- Tuning harpsichords
- · Celestas? Glockenspiels? Other instruments?
- Year-end piano sales?
- Expense reimbursement
- · Reporting (what, who to, how often?)
- Days off for training
- Parking (including service drives)
- Credit card use

Commitments:

- Shop space(s)
- Storage closets
- Equipment
- Tools?
- Staffing
- Hours

Budget

- Parts
 - Rebuilding
 Personnel: student workers, interns
- Contractors
 Piano purchasing
- Buying vs leasing
- Training Travel

When you start a job

- Be guided by:
 - Previous tech
 - Administrators
 - Faculty
 - Facilities people
 - Band instrument repair tech? Scene shop? Curator of string instruments?

How things are done likely has multiple reasons

When to say no?

- Doesn't support mission
- Cost (time, resources, distraction) greater than benefit
- Setting you up for failure
 - Not enough time
 - No budget
- Frustration, exhaustion, burnoutExceeding original job expectations

When to say no?

But:

- Saying yes invites opportunities
- Everybody has their pressures
- Consider their perspective
- Are you helping or are they taking advantage of you?

PIANO TECHNICIAN

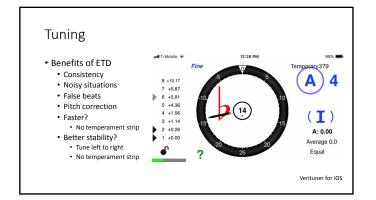
Reactive vs. proactive service

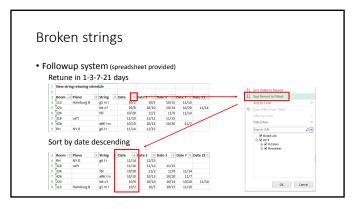
• Reactive: by request

- Proactive: daily checks, periodic tunings, yearly service
- Choice depends on:
 - Pianos per tech (40-50 proactive; 60+ reactive)
 - Resources:
 - Techs, interns, assistants, students, admin help
 Contractors
 - Outside services
- Typical: proactive in halls, piano studios; reactive elsewhere

Tuning

- Full vs. partial tuning vs. touchup
- Floating pitch (A440-442?)
- Pitch corrections, overshoot
- When A/C turns on...





Recurring service needs

Slack in pedals

Benches

• Vinyl tops

- Damper upstop rail too high
- Shim key frame rest block
- Lube key bed, key frame McLube 444 or bar soap
 - First scrape off waxy gunk

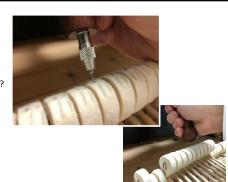


Benches

- Classic artist bench (Jansen) • 90 turns of knob x 2 just to tune?
- Modern choices
 - Hidrau Model (pneumatic): Pianoworks Andexinger (hydraulic) • Discacciati (hydraulic): Bondy piano
- Tilted ("ergonomic") top: no!
- Cloth, suede, faux leather, leather seat
- Replacement seat tops







Voicing

- Deep needling
- Increases dynamic gradient
- Improves sustain
- Permanent, dependable





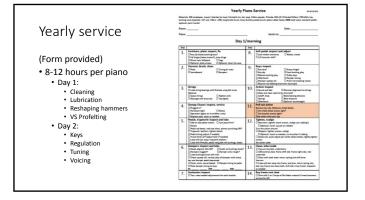




Case cleaning options

- Fantastik mix
- 40% Fantastik
- 40% water
- 20% alcohol
- Cory polish for high gloss, clean satin finishes
- Cory pre-polish/finish cleaner for gunked up satin finishes





Yearly service Preserve and protect: VS Profelt saves bushings Action cleaning Lubrication Regulation Voicing

Grit, oxidation = Friction = Noises = Wear = Need to replace

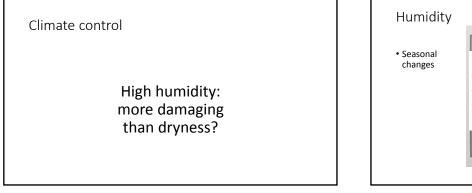
Yearly service

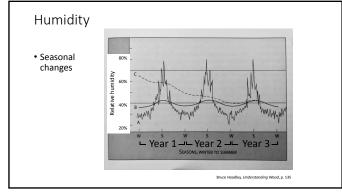
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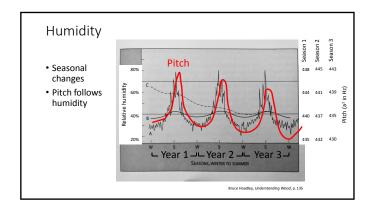
- Plate, around tuning pins
- Vacuum action cavity

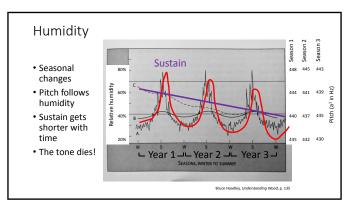
Soundboard (Spurlock set)Case













Humidity

• Expansion, contraction • But wood is constrained:

• Ribs • Glued to rim



Humidity

- Expansion, contraction • But wood is constrained: Ribs
 Glued to rim
- Bruce Hoadley: "you can't do that with wood"





Humidity

• Soundboard has nowhere to go





Humidity

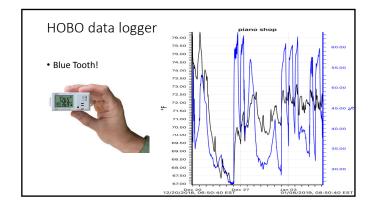
Soundboard crown:
Breathes
Affects pitch, tuning

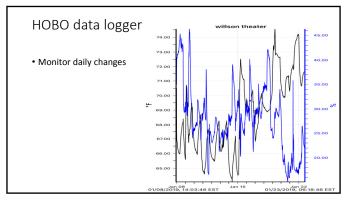


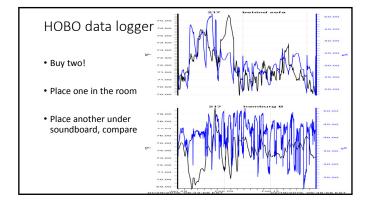
Measuring humidity

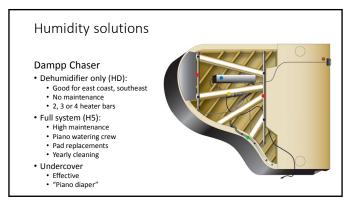
- Train faculty and students on effects of humidity changes
- Put hygrometers in studios • Raises awareness
- Encourage users to report changes
- Carry a portable hygrometer with you











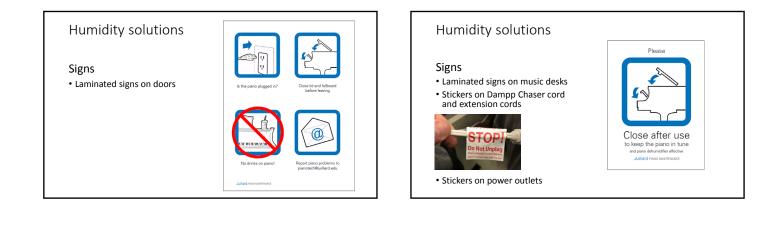
Humidity solutions

Room humidifier

- Automatic: reliably turns on and off within 3% RH
- Moderately effective
- Can you choke off HVAC air volume?
- Needs refilling daily

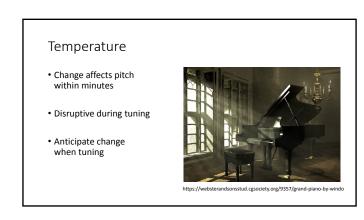












Extended techniques, prepared piano

- Labeling note names (on agraffes, on dampers)
- Marking string nodes (Sharpie)
- Touching strings (alcohol pads for hands)
- Chisel on strings
- Objects on or between strings
- Muting strings
- Removing labels (dampers get bent, rotated)

Extended techniques, prepared piano

- Support or resist? Challenge or problem?
- Part of curriculum, not going away
- People want to do the right thing
- Educate
 - Performers
 - Composers
 Faculty
 - Producers
- Be involved, document policy, work with program heads, administrators
- Extended Piano Use Protocol: https://my.ptg.org/caut/home



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	403		8	272500	1931	КT	Classroom				8	x			_												
	404	88	45	511800	1988	SM	Floater	HD1	х					к								3/1/14		Susan Nederman			
	412	\$8	8	247760	1926	SM	Jazz				х.										ж						

Renewing inventory

- Buy new?
- Lease?
- Buy used and rebuild?

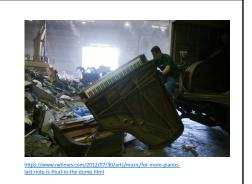
Renewing inventory

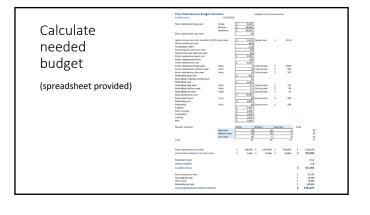
• Donations

- Engage the community
 Fiano fund?
 Capital improvement (enticing) vs service (uninteresting)
 Potential time/resource waster

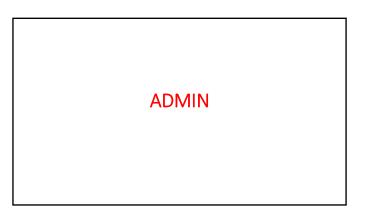
Disposal

- Auctioning
- Selling
- Trashing



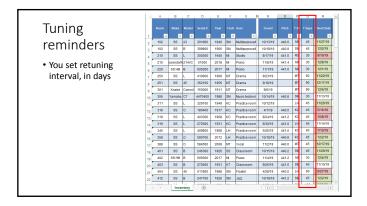


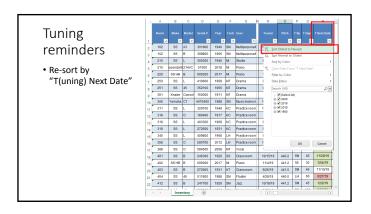
		nses (spi							
DATE	I VENDOR	 CATEGORY 	COST 🚽 C	irig Cost 💌 INVOICE # 💌	Notes	 Summary by 	vendor	Summary by cat	regory
27/2018	MSC	supplies	265.43	265.43.066673000	chases citth atc	Sean	\$ 1,500,00	credit	
72772018	Piano Forte Supply	supplies	1.623.00	1.623.00 271000	crieise ciotri, etc		\$ 1,500.00	Dampo Chaser systems	\$ 9,441.57
77/2018	Planotek	supplies	1,623.00	60.62.111000	VS Pts Feb		5 -	Dampp Chaser systems	a 2,441.51
72/2018	Manotek	supples	319.00	319.00 67520000	valve respirator	Quality Moving		pianobenches	1
7/9/2018	Sean	tuning assistance	300.00	600.00 NV-59	tare respeate	Grainper	\$ 1.564.70		\$ 3,375.00
/10/2018	Schaff	condit	0.00		for returned bag	DIP DIP	5 1,004.10	PlanoParts	5 5,375.00
13/2018	Darctek	PianoParts	63.63	68.68 111700	b/o parallel pliers	lances		hadvare	5 00.00
22/2018	Sean	tuning assistance	700.00	700.00 PM-60	no bernei beite	Home Depot	\$ 2,534,34	piano	
25/2018	Grainger	supplies	1.564.70	1 564 70		Mapes	5		\$ 32,000.0
25/2018	MSC	supplies	377.93	377.93 ?	raos, est cords,	Panatek	5 5 103 26	software	\$
33/2018	Pianotek	supplies	121.61	121 61 1120300	prolube, profeit	Renner	\$ 0,000,20		\$ 7.033.5
30/2018	Sean	tuning assistance	500.00	500.00 PM/61	human human	Reesen	\$.	tuning assistance	\$ 1900.0
31/2018	MSC	supplies	53.45	53.46	PapaMaint20180731 wrenches	Loo	5 403.00	training	\$ 1,700.0
31/2018	Lati	turing assistance	400.00	400.00.41	Plana and a contract of a restored	Steiner	\$	partral	
2/2018	Bates Boos	PlanoMoving	0.00	375 00 150000	SS L 525000 from Randy Lambert		5 4 174 42	equipment	\$.
16/2018	Bates Bass	PlaneMoring	2,175,00	1 800 00 150010	7/11 6 ppos for refinishing	AC Papocat	5 32 000 00	edulation .	÷ .
/13/2018	MSC	hardware	0.00	453 44 58142000	invoice resert, drill bit sets	Bates Bros	\$ 2,175.00		
/14/2018	Pianotek	Dampp Chaser systems	4 858 45	4 858 45 112540		MSC	5 1424.52		š .
/14/2018	Home Depot	supples	2,534,34	2 534 34		Plana Forte Supply	5 1 623 00		
/14/2018	Home Depot	auppies	0.00	73.99		Mario Igrec	\$ 113.55		
15/2018	Schaff	Dampo Chaser systems	1,375,16	1.655.16.1027810-000	incl coaff for ration		\$		š .
15/2018	MSC	Dampp Chaser systems	408,70	408 70	15 and 6 ft ext cords. Power cords.	Kunis	\$ 1,200.00		\$.
15/2018	Marie lorec	supplies	101.83	101.83	Home Depot	Junes	\$		\$.
20/2018	Mario lorec	supplies	11.72	11.72		Conference	s .		s .
21/2018	Schaff	Dampo Chaser systems	2,799,26	2 799 25 1028317-000		Aidate	5 1		\$.
13/2018	AC Planocraft	rebuilding	32,000.00	32 000 00 123123	SS L 227002 SS B 189000	Hotel	\$.		\$.
1/2/2018	Kunia	PianoMoving	1,200.00	1.200.00 222222	SS O 589000, SSB 589500	Helerbasa	s .		ŝ -
									\$.
						Total	\$ 53,818.79		\$ 53,818.75
						Total Cost column	\$ 53,818,79		
						Budget	5 65 000 00		



	1.4	A	в	с	D	E	F	G N	L N	0	Р	٩	R	
Tuning		Room	Make	Model	Secial d			User	Tuped				T Next Date	
Tuning		HOOM .	•		Serial P	Tear			Tuned	Pach		T Days	T Next Gate	
	1	102	88	43	301900	1940	SM	Multipurpose	10/13/19	440.6	м	45	11/27/19	
reminders	3	102	SS	в	399800	1965	SM	Multipurposet	10/18/19	440.8	SM	45	12/2/19	-
	4	210	\$\$	L	300300	1940	м	Studio	8/17/19	441.0	RS	30	9/16/19	
Use Inventory	5	210	osendorf	214VC	51000	2018	м	Plano	11/8/19	441.4	м	30	12/8/19	
	6	220	SSHB	8	605200	2017	м	Piano	11/1/19	441.6	м	30	12/1/19	
spreadsheet	7	250	88	L	410500	1968	MT	Drama	9/23/19		мт	60	11/22/19	
(sample sheet provided)	8	251	S S	45	352100	1955	MT	Drama	9/18/19		мт	90	12/17/19	
	9	301	Knabe	Consol	150000	1911	MT	Drama	9/6/19		MT	90	12/5/19	
	10	306	Yamaha	C7	4470400	1988	SM	Music technol	10/14/19	440.8	SM	30 45	11/13/19	
	11	311	SS 88	0	329100	1949	KC	Practice room	10/12/19 4/1/18	440.6	KC	45	5/16/18	
	12	319	55	1	403300	1968	KC	Practice room	8/24/19	441.2	KC	45	10/8/19	
	13	319	88		272500	1931	KC	Practice room	9(30/19	441.0	UH	45	11/14/19	
	14	345	SS	L	409800	1968	LH	Practice room	5/25/19	441.5	кс	45	7/10/19	
	16	358	\$\$	0	590700	2012	ин	Practice room	10/18/19	440.8	кс	45	12/2/19	
	17	388	88	0	584500	2008	MT	Vocal	11/2/19	440.6	мт	45	12/17/19	
	18	401	SS	B	246300	1926	SS	Classroom	10/15/19	440.2	SM	45	11/29/19	
	19	402	SSHB	в	605000	2017	м	Piano	11/4/19	441.2	м	30	12/4/19	11
	20	403	SS	В	272600	1931	кт	Classroom	9/26/19	441.0	SM	45	11/10/19	
	21	404	\$\$	45	511800	1988	SM	Floater	4/28/19	440.0	ы	60	6/27/19	
	22	412	88	В	247700	1925	SM	Jazz	10/18/19	441.2	SM	45	12/2/19	
		\leftarrow	Inve	ntory	۲									1

	- 4	A	В	с	D	E	F	G	N	0	Р	٥	R	-
Tuning									Tuned					
	1	v 1												
reminders	2	102	88	A3	301900	1940	SM	Multipurpose	10/13/19	440.6	м	45	11/27/19	1
ICHIIIUCI 3	3	102		в	399800	1966	SM	Multipurpose/	10/18/19	440.8	SM	45	12/2/19	Ľ
	4	210	88	L	300300	1940	м	Studio	8/17/19	441.0	RS	30	9/16/19	4
 You enter last tuning 	5	210	osendorfi	-	51000	2018	м	Plano	11/8/19	441.4	м	30	12/8/19	ŧ.
0	6	220	SS HB	8	605200		м	Piano	11/1/19	441.6	м	30	12/1/19	4
dates daily	7	250	88	L	410500	1968	ΜТ	Drama	9/23/19		мт	60	11/22/19	ŧ.
	8	251	SS	45	352100	1955	ΜΤ	Drama	9/18/19		мт	90	12/17/19	4
	9	301	Knabe	Consol	150000	1911	ΜΤ	Drama	9/6/19		мт	90	12/5/19	ŧ.
	10	306	Yamaha	C7	4470400	1988	SM	Music technol	10/14/19	440.8	SM	30	11/13/19	4
	11	311	SS	L	329100	1949	кс	Practice room	10/12/19		ш	45	11/26/19	ŧ.
	12	318		0	180400	1917	кс	Practice room	4/1/18	440.6	KC	45	5/16/18	4
	13	319	SS	L	403300	1968	KÇ	Practice room	8/24/19	441.2	кс	45	10/8/19	Ł
	14	319	88	L	272500	1931	кс	Practice room	9/30/19	441.0	UH	45	11/14/19	4
	15	345	SS	L	409800	1968	ин	Practice room	5/26/19	441.6	кс	45	7/10/19	ŧ.
	16	358		0	590700	2012	UH	Practice room	10/18/19	440.8	KC MT	45	12/2/19	Ł
	17	388		0	584500	2008	МТ	Vocal	11/2/19	440.6		45	12/17/19	Ł
	18	401		B	246300	1926	SS	Classroom	10/15/19	440.2	SM	45	11/29/19	Ł
	19	402		В	605000	2017	м	Piano	11/4/19	441.2	м	30	12/4/19	H.
	20	403		В	272600		KT	Classroom	9/26/19	441.0	SM	45	11/10/19	ł.
	21	404	\$\$	45	511800	1988	SM	Floater	4/28/19	440.0	LH	60	6/27/19	ł.
	22	412	88	В	247700	1925	SM	Jazz.	10/18/19	441.2	SM	45	12/2/19	ι.
		< >	Inve	ntory	(+)					1			•	1





	1	A	в	с	D	Е	F	6)	(N	0	Р	Q	R	•
Tuning		Room						User	Tuned					
-	1													
reminders	7	shop rich	88	L	493400	1985	SM	Classroom	2/23/19	439.8	SM	0	2/23/19	
Terrinders	8	ACP (216)	SS	L	444400	1975	м	Ensemble 3	4/28/19	440.8	м	0	4/28/19	
	9	hop luis 48	\$\$ \$\$	L 45	226700	1926	MT SM	Vocal	5/1/19	441.0	MT LH	30	5/31/19	
 Red: Overdue 	10	404	55	45	409800	1988	SM	Progter Practice room	4(28/19	440.0	KC	45	7/10/19	
	11	D105	88	L	375900	1908		Practice room	6/3/19	440.0	KC	45	7/18/19	
 White: 2 weeks 	13	203a	SS	м	400800	1967	SM	Classroom	6/23/19	440.8	RS	45	8/7/19	
to overdue	14	210	\$\$	L	300300	1940	м	Studio	8/17/19	441.0	RS	30	9/16/19	1
	15	3801	88	0	584800	2009	ш	Practice room	8/8/19		RS	45	9/22/19	
 Green: not overdue 	16	319	SS	L	403300	1968	кс	Practice room	8/24/19	441.2	кс	45	10/8/19	
	17	D107	55	L	515600	1989	кс	Practice room	9/23/19	441.0	KC	45	11/7/19	
	18	403	SS Yamaha	B 07	272600	1931 1988	KT SM	Classroom Music technol	9/26/19	441.0 440.8	SM SM	45	11/10/19	
Screen shot taken on 11/3/19	19	300	ss	07	272500	1988	KC	Practice room	9(30/19	440.8	LH	45	11/14/19	
Screen shot taken on 11/5/15	20	Lobby	Yamaha	e MX	5352400	1995	KC	lobby	8/19/19	441.5	SM	90	11/17/19	
	21	Recital	Shigeru	SK-EX	2680000	2016	M	Hall	11/13/19	441.6	м	7	11/20/19	
	23	Stanton	88	D	593800	2013	SM	Hall	11/14/19	441.0	мт	7	11/21/19	1
	24	250	SS	L	410500	1968	ΜΤ	Drama	9/23/19		MT	60	11/22/19	1
	25	Stanton	SSHB	D	605400	2017		Hall	11/15/19	441.2	MT	7	11/22/19	
	26	311	SS	L	329100	1949	кс	Practice room	10/12/19		UH	45	11/26/19	
	27	102	55	A3	301900	1940	SM	Multipurposet	10/13/19	440.6	м	45	11/27/19	-
		\leftarrow	Inve	ntory	۲								•	j



Google sheets

- Simply import Excel spreadsheets
- Share with other techs, administration
- Allow edits to assistants, trusted techs
- Create separate sheet for each tech (exclusive territories) or
- Give each tech a tab on the same sheet (shared territory such as practice rooms)

Google sheets

· Available as part of this class:

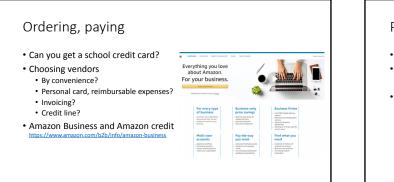
Budget Calculator: https://docs.google.com/spreadsheets/d/1stGK12ljfwZcwB7mLO205PUkPwDAGziWX6lKCioEPbs/edit?usp=sharing

Shop Expense Tracking Sample: $https://docs.google.com/spreadsheets/d/1ldQNISgvEP98GVMOImaUd9_8XqmylCqD5ZgOADzAKQc/edit?usp=sharinggaranteetablesetabl$

Piano Inventory Sample:

https://docs.google.com/spreadsheets/d/1sG7qLjD600EDBbWsOYCJWDMt8FSz8i4o2GeXiMaYZKA/edit?usp=sharing

String Retuning Worksheet: https://docs.google.com/spreadsheets/d/12TUHTZmdH7xMXmpucucrnZH5G_pH6t0dh4YQ2UUPIBA/edit?usp=sharing



Piano moving

- Home team vs. outside movers?
- Liability, safety
- Long-distance
 - Door to door: Modern piano • 18-wheeler: Keyboard carriage













EDUCATION, STRATEGY, VALUE

Education, teaching

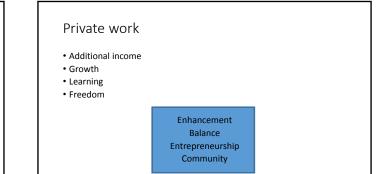
- Offer lectures within other courses?
- Offer a credit course?
 Technical skills vs. appreciation (how much hands on?) Community engagement
 - Schools
 Senior citizens
 Private teachers
- MTNA, other organizations
 Hungry for content, engagement

Opportunities to recruit help, engage community, recruit donors, gain private customers!

Training your group

- Internal sessions
- Weekly meetings
- Conferences
- Group tour of factory or rebuilding shop
- Factory training

People who learn are 24% more likely to feel happy at work Based on survey of 2,000 LinkedIn members in common business functions



Conflicts of interest

- Recommending family, friends, friendly stores, friendly brands
- Commissions on purchases
- Billing school for your work
- Billing school for products you sell
- Using shop for private work
- Using school name for private gain

Openness and transparency = trust, good relationship

Adding value

- Think creatively
- What is truly strategic?
- What creates new opportunities?
 - Internship?
 - Partnership with piano dealer?
 - Mentoring? • Engagement?

Adding value

- How can you change current conditions?
 Work longer hours?

 - Donating used parts? Buy less expensive parts?

Or:

- Work with administrators
- Recruit and train assistants, interns, apprentices
- · Expand community engagement Find donors

Protecting yourself and your team

- Physical well-being
- Preventing injury
- Dangers of working early/late
- Dangers of unsteady schedule
- Diversifying activity prevents burnout • Tuning, rebuilding, voicing, concert prep
- Conferences, training a good break



