Interview	DPE	Changes to Guidance & Regulations	Changes to Pilot Experience Requirements	Addressing Degraded Coventional Nav Skills	New ADT features that should be taught & tested
1	1CM	adequate for what it addresses; technology is wayahead of the guidance; PT Standard does a nice job addressing specific tasks and objectives; there's nothing that addresses how much, it addresses how little you can do (example) of specifically an approach; it's very hard to follow the PTS exactly and do justice to the technology; it's still a fine line about how much is too much; (example) they're tested on weather in the PTS, but people pull up more sophisticated stuff on their cell phones now;	~~I think yes~~; an instructor is supposed to train to proficiency; (example) somebody going through a very structure 141 program, where it's intense, it's focus and they are actually getting through it in minimum time;	I agree; the plain old looking out the airplane is sort of going by the wayside; I think this is why we are having more and more problems with close calls with other airplanes; get more technology trainers that we can use nin the classroom; do more training in the classroom, so when they actually put the stuff in use in the airplane there not so focused on which button to push; already know what to do; its doesn't seem to be very useful to make people retrain in something (steam guages) they are not using;	(note: potential benchmark for furture research) he doesn't use everything at the exclusion of practical airmanship; they do good pilotage...teaches people to know where thay are...and use all this stuff as backup; they use evrything in the airplane... but he teaches them as things break in the airplane, just go on; I've decided it's not the technology that's getting us, it depends on the instructor and the quality of the instructor that gets us; Instructors that don't know how to use everything available; people teach what they know and teach what they're comfortable with;
2	1CR	ambiguity in the PTS; how much leway (discertion) a DPE has; at the discretion of the examiner	realize they're not playing a video game; look outside; get so involved in the glass panel they forget what they're even doing; just looking at the PFD; go back to their instructor	basic piloting skills,using pilotage and using dead reckoning, has been eroded; FAA written test that it's nothing but a memorization test; really need to teach this in addition to the G1000; if the lights go out, what are you going to do? [taking from PT difficult procedures] instrument scan (& cross checking);[taking from PT difficult procedures] the reason people get killed because of unusual attitude recoveries....on a night cross country and you run into expected fog bank or clouds or whatever and you need to be able to make a 180 degree turn standard rate, and not lose altitude;	the instructors need to sit down go over throughly with each particular area - the cautions, warnings, the alerts; thoroughly analyze what he's looking at and what it means; able to recognize, number one, how much of a priority is that to deal with right now?; private pilot coming that really doesn't know aircraft systems, maybe 15% that need a little bit more tutoring
3	1AU	I don't think there're any chanes required right now; (taken from question #13) I'm kind of anti-regulation, you can't regulate common sense, you cannot possibly put enough regulations out there on the examiners to cover every single contingency that might arise; if I'm not comfortable doing this check ride, I just not going to do it;	No; [taken from convention nav skills] they can really put whatever minimum number they want, basically becomes a train to proficiency	instructor training basic navigation skills to proficiency; instructors need to just spend more time with the very basics, like a pilotage, maps; we get into the little more technically advanced aircraft, then obviously the training goes up	you can't get away with collision avoidance type systems, no matter how fancy they get, you still got to look out the windshield;
4	1AL	a lot of applicants they do a self study....that's not enough; they have to go into a formal class and learn equipment in depth, how it operates, how to troubleshoot, how to get them out of situation; make a regulator course out of it;	hours are enough; it's the quality of the training that has to be regulated; people now a days, they go where it's the cheapest	some of these old methods are obsolete now, like non-directional beacon; typically now it's mostly GPS flying, it's shorter route, it's more efficient, and you save a lot of gas	situation awareness; single resource management;
5	1DV	(Instructor) endorsement for Technically Advanced Airplanes and non-Technically Advanced Airplanes; people that learn in Technically Advanced and proceed to the non-Technically Advanced ... missing some building blocks that should be there; (taken from question 2) I think the FAA is dropping the ball in not making a distinction between a person that gets a rating in a TA airplane with a moving map as a posed to a 6 pack airplane;	current regulations does cover it; in a TA airplane, he's obviously spent more time on those systems....because just the complexity;legal doesn't mean safe; minimum (time) that does not mean proficient; (example) instrument rating in a TA airplane, he going to need ... 5 hours maybe 10 (more) to be the same proficiency in a 6 pack airplane; worse going from TA to 6 pack, then it would be from 6 pack to TA; 6 pack to TA .... concentrate on is automation management;	the problem is we're (instructors & examiners) not doing our jobs; it spells it out in the PTS that you will learn to do this by pilotage and dead reckoning; demand on a flight test that a person prove that we can do that; TA airplanes, (pilots) subsconsciously they know it's there and they learn to rely on it; (taken from question #5) take away their MFD; to able to use their backup instruments; be able to interpret needles (round dial instruments);	all the abilities of the automation should be tested; you can't test everything; good examiner is going to get a feel whether this person has learned their system or not; low on fuel; how much fuel you're using; weather features; they have to know the limitations; these things (features) are all great when used as a tool....when used as a crutch then it becomes dangerous; pilots are electricity - path of least resistance, they head for what's easiest and that's where the problem lies;

6	1DF	limit, some of the technology during certain segments, like cross country and some of the other navigation segments,... do not have the GPS availabel, they have pilotage and dead reckoning skills; flight instructor would give the endorsement (by technology);	need less cross country because of the available information to them; cross countries have become too easy;	hard to mandate how it should be; at the flight instructor level... encourage them to turn off the automation and the displays; get people back ou the window and back looking at ground references;	terrain and collision avoidance; TAS versus TCAS; know the limitations to it, when it will work,...when it won't;
7	1DI	When you train in a flat screen and you get into a round gauge airplane, I can't believe they can even fly the dog darn thing; I would definitely require at a minimum a lookbook entry for one or the other; at a minimum from a Certified II is a minimum that needs to be done; there's certain of us that agree that your training needs to be a little bit more aircraft specific (multi-engine & technology); (concern raised that AOPA and FAA are relunctant to change things);	no;	he gets into the airplane, he dials in the GPS, and flies the GPS course, so that's what happened to pilotage and dead reckoning; that's fine and dandy as long as all your stuff is working; doesn't know how to tune in his VOR, get his radials, and do cross radials, and find out where's he at; for climb fuel, climb speed, climb distance, he'd never done that; haven't done a weight and balance yet; examiners have got to fail these students that don't know how do it it; it's already in the training programs to teach them pilotage and dead reckoning; it's already in the regulations; flight schools are not teaching them; flight schools have preferred examiners that don't test them;	they are using advanced technology in place of looking out the window, and knowing where they were at; these people are relying on these G1000s and Avidynes for everything - obstacles, roads, lakes, VORs, everything; that's the problem; they are relying so heavily,... you better make that sucker walk and talk,
8	1BB	I can't think of any changes needed;	no; lack of knowledge that some flight instructors; may need to be some guidance given, in the direction of flight instructors being up to speed; (taken from question# 4) I think there should be some required training for instructor's teaching, the various units;	some people are out just flying GPSs; if those things were to become inoperable, I would have some question as to whether people would be able to get up to speed in a hurry and keep up with where they were at; I think navigation skills have degraded relative to basic pilotage, and dead reckoning, and situation awareness;	to be able to use the unit; most of the young guys don't have issues with that; need to be able to go to the closest airport;
9	1CU	more emergency procedure training; (example) MFD goes blank, what happens, where's the Primary Flight Display come up; the people flying them really don't have an idea about that;	I don't think there are any changes that need to be made;	(taken from question #2) people become totally dependent on it and they have no knowledge of how to do dead reckoning with a sectional map, if the display went out they're basically lost because they don't have the megenta line to follow; I'm going to fail the map display (during PT), they're going to be required to do dead reckoning without any GPS assistance anyway (already required); I think instructors in the field are just going to have to continue to do basic map navigation and kind of forget this fancy stuff until later on;	use of TCAS in response to TA/RA (traffic advisory/resolution advisory); what a pilot should do in the event of a TA/RA; emergency involving terrain; what they should do?;how to avoid it?; there's really not any standard training or standardized training out there; none required in the PTS;
10	1BI	I think some Practical Test Standard emphasis change and some additional changes in training materials; (PTS changes) a little more emphasis on Aeronautical Decision Making and emphasis on Technically Advanced Aircraft both from a system standpoint and putting them to use standpoint as it relates to cross country navigation; (training material) a little more pictures and visual aids as they relate to glass panel Technology Advanced Aircraft, from a more of a VFR or private pilot training standpoint (Airplane Flying Handbook); The Pilot Handbook of Aeronautical Knowledge, maybe a little more emphasis on Aeronautical Decision Making too;	(no) I don't think there's a real clear demand at this point;	the examiner only has 1 day to work with it; creating a simulated, GPS failure, and even having that scenario eligible in the Practical Test Standard; navigate somewhere with the GPS, simulate it doesn't work anymore, and they have to find their way to an airport without those modern NAVAIDs;	maybe some emphasis on those features, that will get you out of trouble, maybe even a Practical Test Standards guideline; ceratinly autopilot and anything that automatic recovery features;

What to do about automation surprise?	Addressing risk taking behavior	Addressing higher order pilot skills	Addressing how the system works	Features of ADT demonstrated during PT
(not addressed)	(not addressed)	I think that actually that's being emphathized quite a bit; even single pilot resource management is tested now; knowledge of icing, contamination, deicing, anti-icing; Scenario based testing is really taking in a lot of that; it's hard to do scenario based training if everyone is doing training based on the old way of testing;	I don't think they need to know how to build it; they need to know how it works; if there'e a malfunction, they need to know it's not working normally and they also know in turn what to expect;	we try to give them scenarios where they can make choices, and solve problems, and show good judgement, and demonstrtae they can handle situations;
on an instrument check ride,had it on autopilot, had it on altitude hold, the autopilot came off altitude hold and the airplane started descending, II let it go on until it was going to be a failure; the teaching....dealing with different piece of equipment...make sure if that equipment is being operated to turn that on as part of their scan; determine when something is not right	wee see it a lot; instructors just need to be able to sit down and teach them; follow your panel, follow your map, if you can look out and see what's going on; make sure you have a through weather briefing, and make sure you understand that weather briefing; people get in trouble with this G1000, they get out there and really didn't listen to the brifer that good and ...get into diminishing visibility	pretty ambiguous..higher pilot skills....individual examiner deciding what the pilot skill level...to prove; private pilot....hold his altitude, say in a speed turn, within a 100 feet,....cut that in half,...increase their effeciency; all this comes from instrument scan, and then interpretation, and understanding	trim tab or talking G1000, is mandatory on how the system works; it's what you can expect out of a system more than how it works; what can you expect out of a system, if you do certain actions; pre-flight the flap system..check it at each level...make sure it stops where it should and comes back up the same way, to me that's the way a system should be taugh;	if the airplane is equipped with a certain piece of equipment the applicant has to be able to deonstrate that understand how to use it and what it will do for him
we need to be teaching these folks glance at it a couple of seconds; look outside the airplane and not fly fly off the automation	more training in ADM; I don't see that as a real problem right now; he's probably going to that regardless; everyone has their own personal minimums; just more education on exactly what proficiency level you are and what you can handle	get back to some basic; still need to teach them to fly the basic airplane; rule#1 is fly the aircraft; more automation...just increase the training time; it's still train to proficiency environment	at the private, more of the basics	the basic operation of the unit; how to function when a unit quits functioning; how to put a flight plan in there, change destination,... where's my nearest airport right now, change radio frequencies without having to fiddle around; pretty much the basics; (taken from question #8) we're required to test on every piece of equipment in the airplane, he has to demonstrate proficiency to use that, you probably can't test the guy on every single function, he needs to have the basics...turn it on, and operate the unit in the environment he's going to be in, change destinations, do his flight plan, make the box work for him; at the ATP level, you better know all the ins and out (99%);
there is no surprise, I mean automation is automation; you're going to have to keep up with the progress in aviation;	just training individuals the good technique of automation and use of the autopilot; all they have to be is managed properly; agin it's system knowledge;	quality of training; everybody is worried about accumulating hours, but they could care less about the quality; regular ground school attendance; that a basic student can understand easily;	90% of accidents, it's human error, and most of these accidents, they are a lack of understanding of the system;	whatever is on the airplane, installed, it has to be utilized and applicant should have adequate knowledge of it, ie the use of the autopilot, the use of the GPS; you've got to be fair to the student, you really can't ask about anything that's not trained on;
prove to me they have automation management skills; prove to me that they have situation awareness without having to have a moving map;	this is an Aeronautical Decision Making problem; you got to train that out of them; if it's not trained, properly trained, there's no doubt the weak pilot will use this to prop him up and that is dangerous; technology is never going to be the answer; it's going to get worse when we bring on synthetic vision; (examiners) see them for 3 to 5 hours max and got to make decisions on their ADM skills;	at the private level I'm looking for ADM and single pilot resource management; (consolidated remarks) the FAA ADM matrix: risk management, automation management, situation awareness, controlled flight into terrain; SBT by far is the best (versus rote learning);	I'm a nuts and bolts kind of guy; firm believer in pulling out the G1000 reference guide, it tells you how to get it back if you can or can't; know what its (system) limitations are; how to operate the system; how to interpret the information, bare minimums on how it gets it, only if they can do something about it;	know all the abilities of that TA airplane; it's all fair game; private (level) - basic stuff; nothings a 100% test; change the radio; tune the VOR; use the GPS; transfer the PFD to the MFD;

(example) still people that think the stall warning is a gear warning; (instructors are the problem) continue until instructors ...have proficiency level to be able to teach the equipment; instructor sign-off for every individual Advance Technology Aircraft they can teach in;	haven't seen the risk taking behavior go up; more emphasis on risk management (threat and error management); extremely difficult to evaluate (DPE); instructors generally has a lot more (understanding)... applicants true personality; Advisory Circular out to the instructors, here's a behavior you really want to watch for and correct;	already supposed to be tested;	(taken from question #7) if airplane has autopilot, they need to be able to use the autopilot,.....through all aspects of the flight; understand how that works; how pitch and power truly affected by the autopilot;	understand the OBS mode, being able to setup and intercept certain radials; (taken from question # 8) know all the pages available on the Multi-Function Display; true mastery of the equipment;
at least half of my checkrides, I ask them what a beep is, what a certain deal is, and in variably, they go, I don't know but it does it all the time; we need to get some lesson plans and cirriculums that actually address these higher technology warnings, and autopilot warnings, and autopilot usage;	(example taken from question #1) a guy that's got $3M in his pocket he goes out and buys him a Pilatus and he has a private pilot license, he jumps into the airplane and goes straight to 25,000; the guy was in the 20s, VFR, swaking 1200; (example) we see the roads, we see the rivers, we see the towers, we see the mountains, we see everything in his synthetic vision; we were in the clouds, we were VFR on top; we had traffic, he had synthetic vision, and hey he was in control; and that's the issue, the cirriculums and lesson plans just don't cover the data;	this cockpit resource management thing is a kind of a new buzz word thing;	so I ask them how the system works?; there's practically no data (glass & GPS) out there for a pilot pilot; I don't know either; but as far as knowing how to operate the system -YES, if you can't twist it or touch it in the cockpit, what do you need to know it for?; i don't think we need to know how to build them is my point; (taken from question #6) they can turn the autopilot on, it can hold a heading, it can hold an altitude, it can track a course, and that's all they know about the autopilot; they don't even know that it's a limitation (minimum altitude) for the use of it;	point to pint using the GPS, navigation, and you do (VOR) intercepting and tracking; put them under the hood, and make them fly straight, do turns, do unusual attitudes;
I haven't seen that as an issue; with a digital indication you have to assess that number when you look at it and it's not instantaneous; I think our minds, oir brains, is easily, more suited to a needle indication or relative position of something on a dial; I think more research needs to be done on....are digital respresentations really the best?;	advanced technology would be more related to risk taking around an autopilot; had a couple of applicants in the last couple of years that couldn't fly the airplane without the autopilot; again that's an instructor's allowing the person to fly (with the autopilot)	I think there should be more emphasis put on that; the instructor's haven't taught students applicant; you have cases where people where you have something immediate action and they'll want to pull a checklist; any you have cases where non-immediate action,.. and they'll want to go by rote memeorization;	I think you need to know how it works;	be able to use the unit, through every chapter of the unit, as well as every page; set it up in a situation and be able to go to a point with it; these young guys, omm, know the thing inside and out;
no, not really;	I hadn't noticed or experienced any of that;	nothing other than what's already being done;	know how to use it; not many private pilots that I deal with are involved at all with the G1000;	how to load a route; traffic function; timing function; INSET function; transponder; plus some emergency features;
more you can expose them to the less surprises they will have; there's so many features and it takes so long to absorb them; we forget this airplane has a feature that may save your life someday, so just an emphasis on making sure that both on the training level and testing level that they're familar with that; at the end, they're going to be much more qualified and safe to operate it;	the airplanes do make you feel so comfortable, almost artificially so; review of accidents and incidents; a real deep look at a pilot, with good intensions, but put themselves too deep into a dangerous situation and couldn't get out; try to get the pilot to relate to the pilot in the accident;	always been taught even though there wasn't as much emphasis is the abiliioty to change plans on the fly; (example) 180 degree turn, diversion to another airport; create a scenario that demands that, do it with some realistic pressure;	the actual mechanical knowledge of how it works is because we're dealing with adavanced electronics is less important than it is when you're dealing with something with moving parts; thorough knowledge of all its features and what it can do for you is the best fit there; conventional instruments, we spend a lot of time talking about its deficiencies, and common errors, and things you mightsee that are not accurate, but the new stuff is so accurate and has built in things to compensate for that;	I'd like to see an overall knowledge of how they can put everything in the airplane to use to keep them safe; because of the Practical Test Standard empahasis, I don't specifically talk about extra safety features such as terrain warning or weather information or autopilot,

Demo system failure & troubleshooting procedures	ADT features difficult to perform during PT	Needed examiner training	Other comment, recommendations, or concerns
we have to, we have to give them system failures, sometimes tho we have to verbalize it; what are your procedures?	(taken from question #1: consider partial panel approach, well with the new airplanes that's sort of a moog point (due to redundancy); it would be very rare to have a complete failure on both sides; you can dim the thing down and not have anything which again is not realistic; you don't just shut them off;); and it's harder with the Avidyne system...you can't dim it down the same way; we can simulate the failure, but we can't always actually fail it;	every 2 years we have FAA a whole day of training .. They're never prepared for anything that's a real concern to examiners; how about we send a list of some concerns ..we would like to discuss (at DPE clinics); (example) how do we create failure of the G1000, what they (141 schools) look like and how to review them;	No; (taken from question #12) software we would be allowed to use that would just be like a certificate, (when) he (applicant) won't be in the system (IACRA);
[not asked]	[taken from question 1 answer] use different methods to show people how to deal with partial panel situation; if people don't teach instrument scan then there's no sense teaching partial panel	I go to my POI,at FISDO you know, we take a check ride and discuss problems that come up in the past 12 months; [taken from comments] when I do have a problem, I'm able to go to him (POI), and discuss it with him; keep myself up to date and totally informed on my own;	IACRA has been 85% effective, (if) they've had some oroblem, like I'll call IACRA directly... I get a call back....within 2 or 3 hours....need somebody right there ready to answer your question
yes; you got to know the unit is working correctly; how do you know an air data computer (example) has failed?; and what are you going to do about it?	fancy one's they really have, per se, partial panel; even if they go back to secondary backup instrument, those are full operating attitude indicators; only one that's pop into my mind now is partial panel;	I don't think ther's enough training possible out there to make an examiner an expert on every piece of equipment; I think that come down to examiners responsibility; if I'm not proficient..then I won't take that test	
actually this should be done in a simulator; if it's not broken, don't try to break it in the airplane; (taken from question # 8) the more... system knowledge you have, the better understanding you will have, you can troubleshoot the fault much quicker; you know exactly what's happening, other than getting all worked up about it;	[partial panel only];	FAA does its share for educating pilot examiners; teach themselves or go to proper school to learn the equipment; you have to do that for yourself;	people should be aware of the automation , of the equipment, they are operating; learning how to operate these systems before he comes into an exam; demonstrate proficiency;
recognize failures and where they go to address the failure (refernce book); have the basic skills ...there no reason to get lost; always plan for the GPS to fail;	don't think any of them is hard to demonstrate; do all this stuff by just simulating; reversionary button ...proves nothing...(create) a double failure (no PFD), ...now all you've got is your standby instruments and your MFD to navigate with; do not confuse scenario based test for reality, in reality you use everything you got; on the MFD i fail it...just put it in the test mode ....now they have to interpret the needles; i am a firm believer in the basics - aviate, navigate, and communicate : mode shed and never give up aviate;	approved TAA course; prove he (examiner) has the ability; current and qualified in the airplane; examiner must be proficient or he should excuse himself;	(none);

they should have ... instant access to the book (reference book) to help them troubleshoot; can't have enough knowledge of it ourselves without use of the book;	unusual attitudes; trying to limit their view of different areas (of the displays); to force them to do unusual attitudes off the backup instruments;	examiners should be required to have 5 hours PIC in certain Advanced Technology Airplane before we can give a check ride in it;	accepting the technology is biased by people's age group; younger kids....very adept picking up the glass airplane; people having the most difficulty are guys that have been flying 10 years on round dials...without a lot of computer background;
what I'm really looking for, especially on the private pilot level, they better be able to turn the darn thing off,...and they better be able to fly that airplane back to an airport; they better know the basic sound of their motor and fly that airplane back without airspeed, without any engine instruments, or anything; you can't br out pulling these circuit breakers, and that's the whole problem;	(taken from question # 10) how to you lose a VOR indicator on a Garmin 1000?, what's your backup?, You can't test it, it's no testable; (taken from question # 10) I don't think there's any backup power guages on the engines;	we have to take a recurring class every 2 years, and we have to take a local class every year, they do over that every year - Advanced technology, Technology Advanced Aircraft; I recommend to evryone of them (FAA) thaqt they do not go rent a Cirrus without first going up with an instructor and receiving some flight training and receiving some ground school;	no, I think we covered it pretty well;
I think there should be an understanding of system failures and troubleshooting; you can only test that verbally; but I don't know how much you can really do when you're in flight?;	no; (applicant) told me that the examiner knew nothing about the G1000 and didn't even know how to simulate a failure on the G1000;	bi-annual training; it's typically about paperwork; using IACRA; use it as a venue...the proper way to test an applicant with certain units and give handouts, and that could be used for future reference;	(repeat on digital representations)
they don't like us pulling circuit breakers, so we don't do that;	I don't really have a problem with it; I use a cut-out plastic thing; have a couple of the instruments covered up; you really can't turn it off; Avidyne you can dim it down; G1000 it seems to be more of a problem;	the least work I have to deal with the FAA is better for us; besides no one at the FAA FISDO in Fort Worth knows anything about it; thus they can't help us if they don't use it and know anything about it; the annual seminars are worthless anyway;	I can't think of anything else;
I think it's much less important at the private pilot level then it is at the instrument pilot level and on up; again there's only so much time;	no; the manufacturers have given us more and more information on how do do that (partial panel);	(training) emphasis on failure modes; equipment specific training; quick reference guide that could even be carried along on the checkride would be very valuable; (quick reference guide) how the FAA recommends to do failure modes, quick overview of this product and what it can do;	the accidents are proving we need to take a close look at what we can do to make these pilots better and help them manage risk of operating these airplanes when they have such a high comfort level;